No. 36.
7909
-8428

Field Book

of

Willis L. Jepson.

1918

Return to Dr. W. L. Jepson,
University of California and
receive reward. Address Berkeley.

Ft. Bidwell to Cedarville, Aug 9. 1918.

— Ft. Bidwell is a neat clean town especially for a settlement in the most remote northeastern corner of California. It has several stores, two hotels, a bank and a number of small shops of various kinds.

We drive south to Lake City, a straggling village by the roadside. As we are eating lunch under the shade of the roadside trees W. W. Mackie, wheat expert of the U.C. College of Agriculture, comes along and we have a good talk. He is inspecting grain fields for rust and smut. I call upon Mrs. J.C. Largent, who assisted Mrs. A.M. Austin in collecting plants when Mrs. Austin was 60 and she was 20. She is devoted to Mrs. Austin with a kind of hero-worship that is intense and describes her

 Lake City, Aug. 9, 1918

friend as the most wonderful and remarkable woman that ever lived in California. She knew, says Mrs. L., every plant of the Pacific Coast and could instantly tell you the name of each one. She came from North Carolina, at least she was a Southern woman, and was married to Dr. Leonard. There was one child, Mattie Leonard (Mrs. Haile) of Quincy; she married secondly Austin, and there were two children, Mrs. Bruce and a son who died about 21. Mrs. Austin lived at Big Meadows, at Quincy, at Davis Creek. She is now in Chico with her daughter Mrs. C.C. Bruce.

We drive to Bedarrills which has a beautiful broad main street,— at least remarkable for a desert town, with many good shops, a bank, newspaper, electric lights,

4750 ft. Ft. Bidwell, Aug. 9, 1918.

and a residence section which surprised me by its size. I do not see in what way so many persons live in this place.

No. 7909. Aster

Ft. Bidwell. Rays white or very pale lavender.

No. 7910. Trifolium pratense L.

Fls. pink-red. In a meadow near Ft. Bidwell. Moist spot.

No. 7911. Potentilla gracilis Dougl.

With 7910. Dry land.

No. 7912. Epilobium paniculatum Nutt. Dry field, with 7910.

No. 7913. Phleum pratense L.

This grass grew with 7910.

No. 7914. Senecio serra Hook.

Many stems from the crown of a heavy root. Stems slender, mostly rather tall. With 7911.

No. 7915. Epilobium ~~spicatum Lam.~~ angustifolium L.

Cor. crimson. On moist hillslope. (= E. angustifolium L.).

Ft. Bidwell, Aug. 9, 1918. 4750 ft. Modoc Co.

No. 7916. Cirsium
4 ft. h. Fls. or rather the styles reddish-lavender, the rest of the head dull white.

No. 7917. Lithospermum arvense Dougl.
This borage grew, on a dry hillside amongst Sagebrush, 3 mi. south of Ft. Bidwell.

No. 7918. Lygodesmia ~~exigua~~ spinosa Nutt.
With 7917.

No. 7919. Eriogonum elatum
With 7917.

No. 7920. Lemna
With 7915 & 7916 in a moist spot 3 mi. s. of Ft. Bidwell

No. 7921. Biscutella douglasii C.&R.
Root somewhat pithy-chambered. With 7920.

No. 7922. Scirpus microcarpus Presl.
With 7920.

No. 7923. Elymus cinereus Scribn. & Merr.
(Det. B. Crampton, 1972)
This grass grew with 7917

Modoc Co.

out at the base of the hill.

No. 7924. Mentzelia laevicaulis Torr. & Gray.
Lake City. 1½ to 2¼ ft. h.
=V. segetalis

No. 7925. Vaccaria vulgaris Host.
Lake City

— We have difficulty in buying bread, there being no bakery in Ft. Bidwell. We inquire from house to house, and people occasionally give us half a loaf, refusing to receive payment. We are thus literally begging our bread from door to door! We pick up a farmer on the road south of Lake City a mile and give him a ride on the running board, setting him down at his cottage door. His wife comes out and they give us some biscuits and two ears of corn. They are from Missouri, Mr. and Mrs. M. Vernon and he fought through the Civil War on the Confederate side under General Joe Shelby.

Cedarville, Aug. 9, 1918.

There are fine-looking farms around Cedarville, which is evidently the center for this Surprise Valley region. It is said that the lakes, dry this year, have been dry three times before, once in 1849. We were also informed by McConaughay that Goose Lake was dry [in ? 1876] and that he drove across the dry bed in a wagon.

We discovered from the "adenoid boy" who came by our camp in Long Valley that Honey Lake is not very deep probably since he exclaimed: "Why, you can wade across. Of course you'd have to take off your shoes"

We drive up into Cedarville Pass across the Warner Mts. and camp in a side cation off the road. It is a sagebrush flat but surrounded by desolate rocky nets. and wild cliffs.

Cedarville Pass to Alturas, Aug. 10, 1918. 7

- Prunus demissa is abundant in Cedarville Pass, 6 to 13 feet high. P. emarginata is common. P. subcordata I see frequently.

We go on thru the pass by a good road and down the other side over the mesas to Alturas. Near Alturas there is a fine growth of no. 7930, Chrysothamnus in a field, in full flower. I have seen a great deal of this but not in flower. It makes a truly fine showing, is really quite gorgeous at its best - and might be, expressively, called Gold Bush. On the flat between Alturas and Likely I notice Iva axillaris, Chenopodium album, and Helianthus annus. also Marrubium vulgare.

As we proceed on the road the cut in the table-land westerly by which the South Fork Pit River cuts through on its way to join the North Fork Pit-

shows up well. Far westward we can see the gap in the main Sierra chain by which the Pit River gets thru to the Sacramento Valley.

From Likely we turn due east and work up the South Fork Pit River, finally entering the cañon (which cuts thru the table-land) by which we get thru to Jess Valley. The table-land* or mesa east of Likely, bordering the Pit-South Fork on the north is wonderfully even or level and falls off abruptly to the river valley below.

We enter Jess Valley, a great grassy meadow, surrounded by mountains with only the cut to the west by which we entered. We cross the green valley to the Sparger ranch camp on a little rise by a running stream of fine water, and with excellent views all over the valley. — Cont. p. 73

* So called by the folk here.

— Sparger, the rancher, in Jess Valley says: "Browse is about all the cattle have to live on, from now on, now that the grass is dried up. Buck-brush they browse a great deal. It is a dark brush about 5 feet high. There is another light-colored brush back in the mountains that is also called Buck brush. Snow-brush they will not touch; nothing will eat it; and that's a pity because it is very thick back in the mountains, so thick you can't get through it. Even the sheep won't eat it. Yes, cattle browse Choke-Cherry a lot; also Bitter-Cherry, and I can't see how they do it and not touch Snow Brush. Service Berry is a big browse. There is no Greasewood in this

region; that grows where there is alkali. Cattle do not browse Sage-Brush but horses will eat it a little in the winter when there isn't anything else; they peel off and chew up the bark and nibble some at the foliage. Sheep browse Sage-Brush at any time of the year; it is quite a browse for sheep."

The equivalents for the common names used above are:

Snow-brush = Ceanothus velutinus.
Service-berry = Amelanchier alnifolia.
Sage-brush = Artemisia tridentata.
Choke-cherry = Prunus demissa.
Bitter-cherry = Prunus emarginata.
Buckbrush = Purshia tridentata.
Greasewood = Sarcobatus vermiculatus probably.

-South Fork Pass, the canon pass to west of Jess Valley through which flows the South Fork Pitt River. Through this canon, the road enters Jess Valley. See pp. 8 & 73.

- We were most hospitably treated by the Sprague people in Jess Valley. We of course expected to pay for milk etc. but they would not listen to the idea of payment.

4500 ft. Plants collected near Alturas. Aug. 10.

No. 7926. Potamogeton natans L. Pond.

No. 7927.

Muddy edge of pond. I have never seen a composite that looked so much like a butter-cup as it grew, in flowers + habit.

No. 7928. Ranunculus cymbalaria Pursh. With 7927.

No. 7929.

In pond, with 7926.

No. 7930. Chrysothamnus nauseosus var. consimilis (Greene) Hall See p. 7. and p. 35.

Dry flat, sandy, 1½ to 2½ ft. h.

No. 7931

In pond with 7926.

No. 7932. Haplopappus hirtus Gray var. hirtus

This composite grew on a sandy flat.

No. 7933. Orthocarpus luteus Nutt.

Sandy flat. Corolla yellow, its lower lip a shade longer than upper.

Plants collected near Alturas, Aug 10.

No. 7934. Carex Modoc Co.
Marshy margin of pond. Individuals not common.

No. 7935. Utricularia vulgaris
In pond with 7926.

No. 7936. Carex simulata Mkze. (Det. M.M.K. 1920)
With 7934.

No. 7937 Elymus triticoides Buckl.
This grass grew on the flat with 7932.

No. 7938. Salsola Kali L. var. tenuifolia Tausch.
The Russian Thistle is abundant along the line of the "California, Nevada and Oregon Railway".

No. 7939. Atriplex
On railway embankment, 3 ft. h. Very bushy but erect.

No. 7940. Urtica holosericea Nutt.
3 ft. h. South Fork Pass* to Jess Valley in the cañon. (* See note p. 10 at bottom.)

No. 7941. Smilacina stellata Desf.
Berry nearly purple-black but still showing the 6 stripes. Does it become wholly black when dead ripe? See no. 7783. See p. 14.

Juniperus occidentalis

The sage-brush hills are everywhere covered with a thin stand of Juniperus occidentalis between Likely and the Pit River cañon into Jess Valley. It is a species of great value and resource because it is the only species of tree which grows on the arid sage-brush hills in this place, between Alturas and Cedarville and in all other similar sage-brush. It is only rarely that we have sagebrush hills of some extent without this species. Its economic value is considerable. They use it exclusively, if possible, in Alturas for fuel. The main trunks are used for posts in fencing and to support fine telegraph and telephone poles which cannot be put in the ground. Occasionally they get long

enough Jumper poles for telephone use and sometimes for electric power poles. I associate this species with bare granite plateaus or cliffs in the Sierra Nevada at 9000 to 12000 feet; and it is not easy to homologize the conditions there with the conditions here but I presume aridity in both cases is one common factor of outstanding importance.

No. 7942. Sisyrinchium
Borders of meadow, Jess Valley.
– Smilacina stellata Nutt. Jess Valley. In river bottom (South Fork Pit-) in shady thickets. See no. 7940.
No. 7942a. Aster
With 7940.
No. 7943. Galium
With 7940.
No. 7944. Mentha arvensis L. var. villosa =var. canadensis Briq. With 7940.

The Absence of Atriplex.

– Since entering Long Valley under Beckwith Pass I have noticed nowhere in Lassen or Modoc counties any species of Atriplex. The absence of Atriplex shrub species from the arid Sagebrush hills seems remarkable. I expected to find them but am looking for vast. Of course I may easily have passed them here or there, blended in the gray of Sagebrush, since an automobile moves too rapidly for accurate detailed observation until a stop is made for field observation. I found none, for example, on the west side of Upper Lake or of Middle Alkali Lake; and Mrs. Manning confirms me by saying that such are to be found on the east side of those lakes but within the California line as well as further eastward in Nevada. The Atriplex no. 7939 is plainly an introduction.

Jess Valley. Modoc Co. 5200 ft.

-Jess Valley is one great meadow with somewhat higher benches or flats bordering the meadows. Along its living streams is more or less woody growth, long borders of globose willows, resting on the ground and individualized and yet forming in most places a continuous thicket, groups of the stately Populus trichocarpa forming with the low willows and green meadows satisfying pictures of bucolic beauty.

No. 7945. Glyceria elata (Nash) Hitchc.
This grass grew with 7940.

No. 7946. Epilobium adenocaulon ~~californicum~~ Hausskn. With 7940.

No. 7947. Chrysothamnus viscidiflorus var. pumilus (Nutt.) Jepson 8-10 in. h. Dry flats. This (Twisted-Leaf Rabbit Bush) and Gold Bush (same as no. 7930) are the two most common bushes in this region aside from artemisia tridentata Nutt.

No. 7948. Tetradymia canescens DC. This composite seems to be uncommon but is probably widely distributed along the west foothills of the Warner Range since I saw it at Davis Creek and several other places. Dry hills and flats. 15-18 in. h.

No. 7949. Sparganium
Wet muck, river bottom marshlet.

No. 7950. Aster
River bottom.

No. 7951. Gnaphalium
Moist river bottom.

No. 7952. Carex rostrata Stokes
With 7949.

No. 7953. Juncus bufonius L.
With 7951.

No. 7954. Juncus ensifolius Wikstr.
With 7949.

No. 7955. Mimulus guttatus DC. var. A.S.G.
With 7951.

Eagle Peak (=Saddleback Mt.) Warner Mts.

– Poison Flat, on Emerson Trail to Eagle Peak. Ceanothus velutinus Dougl. occurs abundantly. A feature of this flint are the groves of Populus tremuloides. Pinus ponderosa occurs in a forest band, running along the sides of the mountain, the favored areas. Some Juniperus occidentalis, 1 to 2½ ft. diam. and 22 to 30 ft. h. Ceanothus velutinus is 4 to 5 ft. h. Aspen is browsed and all the willows are browsed somewhat. The Red-berried Currant (No. 7958) is common and 4 to 6 ft. h. Abies concolor is frequent. Amelanchier alnifolia occurs [Ceanothus prostratus I remember – Sept. (1918)]

No. 7956 Rorippa curvisiliqua (Hook.) Bessey 5200 ft. This crucifer grew with 7951.

No. 7957. Sanguisorba occidentalis Nutt. Dry hills near streams, Jess Valley. 5200 ft.

– We went up Eagel Peak from Campbell's Ranch, Jess Valley, on the Emerson Trail (Forest Service). Above the first accent we come to Poison Flat and cross it easterly.

Red Currant (= No. 7958) is 3 to 6 ft. h. numerous stems from the base, forming a bush or shrub rounded and broader than high. There must be nearly 100 acres in which this is the dominant shrub. It occurs all over the mountain above this up to the first Pinus albicaulis.

Ceanothus velutinus is abundant on the easterly parts of Poison Flat. It has numerous stems which are spreading, mainly nearly horizontal when the bush is only 3 feet high. On this "flat" it is mostly 4 ft. h. on the average. Other species on Poison Flat are Prunus emarginata, Artemisia tridentata (common), Populus tremuloides. The groves of this are small

but interesting. One grove, 20-25 ft. h. with the "crowns in the top", short on long poles, is very striking, there being no underbrush or other growth to conceal the thick growth of white poles.

We follow along the easterly side of a ridge running northerly which leads to the peak, debouch into a great draw under the south side of the peak. Sheep have skinned the vegetation all the way to the summit but they do not touch the following:

— Ceanothus velutinus Dougl. *
— Wyethia mollis Gray (Mule Ears)
— Holodiscus discolor var. dumosus. No. 7962
— No. 7963

* My saddle-horse eats greedily the white-dry leaves of this.

No. 7958. Ribes cereum Dougl.

6200 ft. Poison Flat. See p. 18, 19. This is browsed by cattle, apparently not very much by sheep. Red berry.

No. 7959. Agoseris cf. glauca

This composite grew on a dry steep Sage-brush hillside with Pinus ponderosa near. 7500 ft.

No. 7960. Osmorrhiza occidentalis Torr.

This umbellifer grew with no. 7959.

No. 7961. Cryptogramma acrostichoides R. Br.

7600 ft. This fern grew under rocks, in the swale below Eagle Peak proper.

No. 7962. Holodiscus ~~discolor var. dumosus Dippel.~~ microphyllus var. glabrescens Eagle Peak. Sheep did not touch this. = 3-3½ ft. h. 8800 ft. var. glabrescens Jepson!

No. 7963. Haplopappus Bloomeri Gray det. R. Bucigalupi 2/26/64

See p. 20. Rays few, yellow. Odor very disagreeable, turpentine rankness, not touched by sheep. 8800 ft.

No. 7964. Railardella argentea Gray Colonies, 5 ft. sq. Summit Eagle Peak. 9900 ft.

Eagle Peak, Warner Mts.

No. 7965. Eriogonum heracleoides var. angustifolium
Abundant on summit. Flo. greenish-yellow.

No. 7966. Carex **straminiformis** Bailey
Summit, in rocky places

No. 7967. Arenaria nuttallii Pax.
Petals white, entire. Sts. 10, spreading a little at first, the styles (distinct) branches approximate as if a single style. Later the stamens spread more widely and the 3 styles separate and spread to about the position occupied by the stamens. Petals ovate, acute, almost sagittate angled, then drawn down to the short-claw. Rocky places.

No. 7968. Pentstemon
Forming mats 1/2 to 1 1/4 feet broad on the summit. Cor. red-purple, aging blue! Common.

9900 ft. Aug. 13, 1918 Modoc Co.

No. 7969. Eriogonum **umbellatum** var. **covillei**
Forming mats on the surface of the ground. 1/2 to 1 1/2 feet broad. Fls. at first yellow, aging brick-red, the veins aging deeper. Summit. perianth mid.

No. 7970. Agoseris cf. glauca
This composite grew flat on the ground on the summit. Not common. Flo. yellow, fading red-brown.

No. 7971. = Ivesia Gordonii (Hook.) Torr.
Potentilla gordonii Greene.
(Potentilla utahensis Greene acc. to det. in 1922.)
Flowering branches widely spreading or reclining. Summit.

No. 7972. **Trisetum spicatum (L.) Richt.**
This grass grew on the summit. Not common

No. 7973. Arabis platysperma Gray.
Cor. red. Summit.

No. 7974.
This composite loses its long yellow rays very quickly. Summit.

Eagle Peak, Warner Mts.

No. 7975. Senecio occidentalis (Gray) Greene ~~fremontii var. occidentalis~~ Gray. Summit of the peak, branches ascending at the ends. Rays pale yellow.

No. 7976. ~~Lewisia~~ Claytonia bellidifolia Rydb. Summit of the peak, forming rosettes in the rocks, the fls. 1 leaf thus appearing axillary. Cor. pink.

No. 7977. Oxyria digyna Hill. Summit of the peak.

No. 7978. Carex Summit of the peak.

No. 7979. Epilobium anagallidifolium Lam. Prostrate, rocky summit of the peak. Fls. white, turning red.

No. 7980. Phacelia frigida Greene. Summit of the peak, in the rocks.

No. 7981. ~~Calyptridium~~ Spraguea umbellata Torr. Summit of the peak.

—

Same as 7880 occurs on summit.

- Of the 3 more common shrubs higher on the mt., Ceanothus velutinus is not touched by sheep at all, Red Currant No. 7958 a little, Symphoricarpos (same as no. 7869) very heavily.

- The view from the summit is comprehensive. Surprise Valley and its pretty farms and ghastly alkali lakes, western Nevada, Warren Peak, Mt. Bidwell, Tule Lake Reservoir, Mt. Lassen rising high above the range like a narrow horn, and very faintly in the west the upper snowfields of Mt. Shasta glistening in the sun of high noon. The heavy forest fires in the Lassen National Forest make the view westward very poor.

Jess Valley, Modoc Co.

No. 7982. Vaccaria vulgaris Host. = V. segetalis

Petals pink, erosulate at apex, usually notched distinctly. Cult. fields. Very abundant, filling a field at Spargur Ranch.

No. 7983. Taraxacum officinale

Hillslope springs.

No. 7984. Potentilla gracilis Dougl.

Flo. yellow. Moist ondws.

No. 7985. Juncus ensifolius Wikstr.

By stream

No. 7986.

This composite grew in a very dry (summer) but exceedingly wet spring flat.

No. 7987. Erigeron divergens T. + G.

This Erigeron grew in the dry fields, but in good land.

No. 7988.

In a very dry summer but highly wet spring flat.

5200 ft. Aug. 14, 1918.

Pinus albicaulis on Eagle Peak, Aug. 13

The Whitebark Pine covers the entire crown of the peak, forming a thin forest which is plainly made out from Poison Flat. Nearly every tree I noticed was loaded with full-grown cones, that is full-size cones. The bark is whitish and smoothish, but checking off in thin plates or rather thin small scales. The first trees come in, in the swale just below the peak southwesterly at 7800 feet.

- Epilobium obcordatum on very summit Eagle Peak.

No. 7989. Oenothera

Rich fields

No. 7890. Senecio hydrophilus Nutt.

Discarded Insect damage LKH-1965

Abundant in a marshy meadow flat, now nearly dry. Flowers yellowish, but not striking or distinctive. Better say yellow.

Jess Valley, Modoc Co. Aug. 14.
5200 ft.

Juniperus occidentalis

Its varied form is remarkable. Trees with a single trunk 4 to 8 ft. high, trees with many stems from the base; old trees becoming round-topped and simulating the figure of a broad-leaf tree. Trees with dense crowns, others with thin crowns. Trunks 2 to 3 ft. diam. are common in mature trees.

No. 7991. Galium

"Berry" whitish, Ditch bottom, now dry.

No. 7992. Carex nebraskensis Dewey

Now dry but earlier very wet grassy flat.

No. 7993. Castilleia

"Flowers", i.e. spike a luminous pink, a dance-girl pink, a bright but rather light pink looking towards vermilion. Now dry but earlier very wet grassy flat.

Madeline Plain, Aug. 14, 1918.

We drive out to Likely, to Madeline, thence down the center of the Madeline Plain, then turning at right angles to the west side. The plain is mainly covered with Artemisia tridentata, mostly 2 or 3 but often 4 or 5 ft. high. The second chief species Gold Bush (Same as 7930) which is now just coming into flower. A section of the west side of the plain where this is common must present a magnificent sight when in full golden dazzling bloom. Twisted-leaf Rabbit-Brush (Same as no. 7874). is also rather common in some places. When Artemisia tridentata is cleared from the land Iva axillaris comes

up profusely, forming pure colonies! See p. 51.

We work down the west side of the plain and camp at the base of the foothills. The spot commands a magnificent prospect of the mountains, north, east and south of the plain. Eagle Peak shows up finely beyond Madeline station and we also see Warren Peak. McDonald Peak is a sharp peak, very prominent northerly from Termo. South of McDonald one can look through the broad gap to the ranges of Nevada state. Next south in the distance is Shinn Peak, while further westward is Fredonyer Peak, which we observed from Horse Lake.

Two miles back we passed a ranch house against the hill, with poplar trees about, the only trees (planted) we have seen on the Madeline Plains. There are no spontaneous trees which is another reason for calling the area a plain. At the front fence and quite oblivious of our passing machine stands a sturdy white-haired veteran with a Roman nose and Gladstone beard; at his eyes an old-fashioned pair of binoculars which he is focusing across the gray plain (towards) at Termo. After we go into camp a wagon load of people drawn by two blacks passes our camp-spot, and in the wagon with the family are two soldiers, being brought from the train at Termo, the train which came into Madeline twenty minutes before we left. We now understand the picture of the old man at his front gate.

No. 7994. Saponaria officinalis L.

This caryophyll grew in dense plots or banks of it on an abandoned cabin site in the pass east of South Fork Peak, not many miles from Madeline. Aug. 14. Lassen Co. 5600 ft.

No. 7995. Eriogonum baileyi var. baileyi

Fls. greenish-white, on sandy land, east side Madeline Plains at base of foothills. Aug. 14. 5300 ft.

No. 7996. Artemisia tridentata Nutt. ssp. tridentata

5300 ft. Low, 9-14 in. h., on the dry plain near our camp-place. Aug. 15

We drive south along the west side of the plain and turn through a gap level with the floor of the plain into a hill-locked valley, narrow, running north, and pass over a range of hills, past a school-house. This valley is like Madeline

Plains and is but an arm of it.

We drive over the rather low range of hills and have a sudden view of part of Grasshopper Valley, a view which grows in extent as we go down and see further north where the valley extends. It is a truly remarkable sight, an old lake bed, level as a billiard table, not a sign of a bush on it, but most of it green with a dock (No. 7997). It is so level, its sides so abrupt against the mountains, and most of it appearing to the eye green — and so long and so wide, the immensity of a plain has this valley! It makes a strong and powerful appeal to the eye; and it is very unlike the Madeline Plain on account of the absence of Sagebrush for one thing.

Eagle Lake, Lassen Co.

5300 ft.

No. 7997. Rumex lucustris Greene

See p. 33 ante. Grasshopper Valley floor

No. 7997a. See p. 199. Polygonum coccineum Muhl.

No. 7998. Oenothera tanacetifolia T.

J. Grasshopper Valley.

– We pass over another low range of hills with the same vegetation – Sagebrush, Choke- and Bitter Cherry, Antelope-brush, Juniper. And soon come into sight of Eagle Lake, a fine body of water with irregular shores and bold mountains of unequal height and somewhat varied outline rising from the waters edge. It is a much more pleasing and interesting lake than Lake Tahoe. We proceed south along a good road which gives a fine view. A rancher tells us the lake has been filling higher with water in the last 15 years, the road having been moved up the hill 3 times.

This year however the water line is 3 feet lower than last year at this time.

No. 7999. Urtica holosericea Nutt.

5200 ft. 6 ft. h., shore of Eagle Lake.

– We leave Eagle and go over a low pass to the headwaters of Willow Creek and in a few miles make a noon camp.

No. 8000. Lemna.

By a great spring on Willow Creek, near Merrillville. 5000 ft.

– Two thirds the way down the shore of the northeasterly arm of the lake which we are following we come to a ranch on the lake shore with a fine row of poplars (the infallible mark, across country, of the homestead in Lassen and Modoc counties) in front of it. The rancher here says that Gold Bush (Chrysothamnus (same as 7930)

is called Horse Sage and that horses not cattle, eat it after it is dry.

– From Merrillville we run easterly through a fine forest on the "flat" of the Willow Creek Canon and so into the open meadow country of the lower Willow Creek country. Here I see Eremocarpus setigerus by the roadside and at intervals by the roadside over the mountain to Susanville, but always suggesting introduction in this region. I do not see it afar in the sagebrush away from "man's culture".

– We leave Susanville, go up Gold Run Creek and ascend the Sierra Nevadan wall. Immediately, at the very beginning we strike characteristic west slope

Sierran species. Rubus parviflorus thick on the forest floor beneath Pinus ponderosa and Quercus Kelloggii and Incense Cedar. There is Abies concolor and Pseudotsuga taxifolia, Ceanothus prostratus, Amelanchier alnifolia, Acer glabrum, Prunus emarginata, Alnus ternifolia Nutt. ? Arctostaphylos patula, Red Currant (same as 7860, Ribes cereum Dougl.) Castanopsis sempervirens, Ceanothus cordulatus Kell., Pinus Lambertiana. The alder – see above – makes a dense thicket along the stream and similar dense colonies de-touch up favorable laterals. All the above on Gold Run Creek, s. of Susanville.

– We pass over the summit* and go down grade several miles and camp (headwaters Lights Creek) on a peninsular flat-topped ridge under noble Yellow Pines.

* near Diamond Mt.

Engels, Lights Creek, Plumas Co., Aug. 16, 1918. 4400 ft.

No. 8001. Lemna
Merrillville, Lassen Co.

No. 8002. Myriophyllum spicatum L.
Merrillville. 5000 ft.

No. 8003. Castanopsis sempervirens Dudley. Gold Run Creek, Susanville. 5000 ft.

No. 8004. Rhamnus ~~californica var.~~ rubra obtusissima (greene) comb. f. ~~rubra Trel.~~ Engels, on Light Creek.

No. 8005. Solidgo
Engels, on Light Creek.

No. 8006. Verbascum blattaria L.
Engels. 4 ft. h.

No. 8007. Crepis intermedia (?)
Engels, on Light Creek.

No. 8008. Stephanomeria virgata
Engels. 5 ft. h.

No. 8009. Spiraea Douglasii Hook.
Engels. 2 to 5 ft. h.

No. 8010. Gnaphalium

Moist ground otherwise bare
Near Engels, Lights Creek.

Taylorsville, Indian River, Aug. 16, 1918. 3600 ft. Plumas Co.

No. 8011.
Engels. This composite grows in moist spots. Rays light yellow. With 8010.

No. 8012. Silene pectinata Nats. Petals bright crimson. Dry flats near Taylorsville.

No. 8013. Erigeron divergens T. + G.
Dry flats

No. 8014. Helianthus
Dry flats

No. 8015.
This has white fls. with a pinkish cast and grows on dry flats.

No. 8016. Eriogonum vimineum
Dry flats

No. 8017. Arctostaphylos patula Greene. Greene. Dry flat. Berries packed.

No. 8018. Rosa woodsii Lindl. var. ultramonta Jepson. Indian River near Taylorsville.

Genesee Valley to Red Clover Valley

3600 ft.

No. 8019. Zauschneria californica ssp latifolia Greene ~~var. tomentella Jepson~~ Rocky flat, Genesee Valley.

No. 8020. Eriogonum umbellatum var. polyanthum Rocky flat, Genesee Valley.

No. 8021. Chrysopsis with 8019.

No. 8022.

Rays pale yellow, Dry flat, Genesee Valley.

No. 8023. Ranunculus aquatilis L. Foot of Clover Creek.

No. 8024. Carex

Forming great heavy tufts of long leaves which droop down gracefully over the rocks to the waters edge. Always by the stream side and making an impressive decoration to the banks of Clover Creek. 5200 ft. See p. 42.

Aug. 16. 1918

Plumas Co.

No. 8025. Epipactis gigantea Dougl. 5300 ft. Clover Creek cañon.

No. 8026. Pycnanthemum californicum Torr. With 8025. See p. 52.

– We break camp on headwaters Light Creek and go down grade many miles thru a fine Yellow Pine forest and come to Engels, a great newly developed copper mine, with the beginnings of a copper mining town. Then into the valley of Light Creek, a beautiful valley with its green meadows and farms. Then to Taylorsville, an unkempt village, then up the narrow valley cañon of the beautiful Indian River and over the mountains to Genesee Valley, also attractive with a fine well-built hamlet, the most solid tasteful and clean I have seen in California.

We leave Indian River at Flowery, a picturesque old farm with its old brick mansion and colonial front, and proceed up Clover Creek. It is all up grade, (at first right, then) left hand side of the canon. On this southwest wall is much Quercus Kelloggii mixed with Pinus Ponderosa but at equal altitudes on the opposite wall I see none in the emiferous forest. We are on the steep wall, and climb higher and higher above the foaming torrent of Clover Creek in its rocky bed in the canon bottom. One of the features of this stream are the "bunch-grass" tufts of Carex

no. 8024, with its long leaves symmetrically curving down to near the surface of the water and ornamenting the boulders

among which they are set. The long slender leaves spread from a center and droop in every direction.

We finally come out "on top" and proceed up and down thru a thin forest with the ground cover of Sagebrush and go into camp by the side of a willow-bordered stream in a meadow, a stream slow enough to carry Pondweeds and Nupharss.

No. 8027. Ranunculus

In slow-moving pool of the creek.

No. 8028. Nymphaea polysepala Greene. (Nuphar polysepalum Engelm.)

Stigmas 10, 10, 11, 11, 14. Stamens about 125. Sepals 7, with 3 other outer less highly colored sepals. Clover Creek, Red Clover Valley.

No. 8029. Potamogeton natans L.

Clover Creek. Red Clover Valley.

No. 8030. Polygonum

Fls. white. Dry fields

No. 8031. Madia glomerata Hook.

With 8030.

No. 8032. Chrysothamnus Parryi var. nevadensis (Gray) Jepson Rather common on the floor of the valley, off the the alkali flats. Corollas yellowish but general effect of infl. whitish or grayish.

No. 8033. Chrysothamnus nauseosus var. speciosus (Nutt.) Hall Gold Bush. Common off the alkali flats but not abundant as in Modoc Co.

No. 8034. Potentilla pickeringii Greene. =Ivesia pickeringii Torr. ex Gray

Stems (flowering decumbent, but I afterwards found them erect). Petals white, obovate, truncatish or obtuse, with very narrow claws (abruptly narrow). Stamens 16, 16.

No. 8035. Lupinus confertus Kell. ~~lepidus Dougl. var. torreyi Jepson~~ Fls. blue. Common in colonies in the richer sandy spots.

No. 8036. Sagittaria

Leaves uniformly small

Pondlets.

No. 8037. Downingia elegans Torr.

Corolla light blue, its lower lip with parallel acute lobes. Palate with 2 obovate yellow spots on a field of white, the yellow spots contiguous laterally. Anther-column down-curved, that is turned toward lower lip, its under side bearing two recurved bristles like a pair of grappling hooks. Lanceolate lobes upper lip spreading, somewhat divergent. Corolla, without any real tube, the palate cup-shaped. [Sinus between lobes upper lip not cut so deeply as in no. 8038. — Observed May, 1920).

Sierra Valley, Aug. 17.

No. 8038. Downingia ~~pulchella~~ bicornuta Torr.
Corolla darker blue than in
No. 8037. Lower lip spreading abruptly at right angles to the tube, which is very definite and distinct. Lip 3 lobes, the lobes quadratish, abruptly apiculate, the lateral spreading at right angles to the middle one. Junction of lip with tube a distinct rim, marked by a transverse band of purple and bearing 2 elevated papillae or tits. Upper lip of 2 lanceolate lobes, these a darker purple than the lower lip, the lobes tending to be approximate or closely parallel. The lobes of upper lip are shorter and narrower than in no. 8037. Anther column only slightly curved forward, and with one bristle projecting (forward) from the lower side. Lower lip with two yellow spots on a cuneate-quadrate field of white. Lower lip broader than long.

5000 ft. Aug. 18, 1918. Sierra Co.

No. 8039. Carex athrostachya Olney

No. 8040. Typha

No. 8041. Carum Gairdneri Gray.
This umbellifer has white flowers and grows in moist fields.
No. 8042. Carex
Leaves in glaucous or bluish-white tufts in low places where fresh water is seeping or running, that is in meadows. I saw this in Jess Valley. The mower had cut it off clean in the fields and it was starting up afresh and very blue-glaucous, so that I thought of somewhat similarly shaped and hued tufts of Madia luzulaefolia as they come up in the hay-fields of the Sacraments after the scythe has cut off their first growth.

No. 8043. Juncus dubius Engelm! Typical! Wet meadow fields.

No. 8044.

With 8043.

No. 8045. Peucedanum nudicaule Nutt. Dry flat.

No. 8046. Balsamorrhiza hookeri Nutt. Dry flat.

No. 8047. Wyethia mollis Gray Dry flat.

No. 8048. Elymus triticoides Buckl. This grass grew in heavy and spaced or separated tufts on a dry flat. 4-5 ft. h.

No. 8048a. Elymus cinereus Scribn. & Merr.

No. 8049.

Rays purple; disk yellow.

No. 8050. Potentilla pickeringii Torr. Dry flats. =Ivesia pickeringii Torr. ex Gray

No. 8051. Haplopappus lucidus (Keck) Keck with features of H. racemosus subsp. glom. & Eratus (Nutt.) Hall. Rays yellow, few. Stems ascending from a heavy tap-root Dry flats.

No. 8052. Chrysothamnus viscidiflorus (Hook.) Nutt. Twisted-leaf Rabbit-brush. Rather common in Sierra Valley in the higher flats, off the alkali. This specimen was collected in the door-yard or old garden of the old J. G. Lemmon home, who once lived here at Sierraville and taught school here.

All the specimens recorded on pages 47 to 49 were collected within 100 or 200 yards of Lemmon's garden.

No. 8053a. Navarretia intertexta Bth. var. propinqua Brand. With 8053.

No. 8053. =Navarretia Gila minima Nutt. Moist low spot in meadow.

No. 8053a. Navarretia propinqua Suksd.

No. 8054. Lupinus confertus Kell. Fls. blue. Sandy levels in meadows.

No. 8054a. Scirpus microcarpus Presl. Wet meadow.

– Sierra Valley is a great level somewhat roundish meadow with mountains surrounding it, but no heights of striking altitude or of prominence. It is very marshy over much of its surface and furnishes some of the water which makes the middle fork Feather River. We came into the valley from the north, from Red Clover Valley, and stopped for supplies for the machine at Beckwith, which is a very old town or village. Thence we proceeded down the west side of the plain to Sattley, a corner hamlet, and then to Sierraville. The vegetation of the valley floor as to its bushes (it bears no native trees altho the surrounding mountains are covered with conifers) are as species as follows: Artemisia tridentata (very abundant and giving characteristic aspect to the plain); Gold Bush (No. 8033); Twisted-leaf Rabbit-bush (No. 8052); Chrysothamnus (no. 8032); Purshia tridentata (hardly on the floor, mostly on the lower slopes). Iva axillaris is common. [It is not noticeable, flew, in the Sagebrush, but clearing of land brings it into prominence. See p. 30]. Lupinus, No. 8035, is common in great colonies in sandy fields. The vegetation of the wet marshes is indicated somewhat by nos. 8039–8044.

– We drive east ½ mile from Sierraville, turn north and in ¾ mile come to the J.G. Lemmon home on the right-hand side of the road. The house is now tenantless and used by the present owner, a Mr. Nichols, as a summer-camp for his haymakers. It is a one-story cottage with an attic.

Sierraville, in camp on a mt. stream 6 miles south.

[Oxyenanthemum californicum Torr. ^ No. 8026, Cent. Stamens 4, 2 lower longer. Corolla throat hairy. Upper lip entire, erect. Lower lip spreading, the lobes parallel, the 2 lateral short, acute. Lobes lower lip purple-dotted. Filaments glabrous. Upper lip erosulate.]

— We drive south of Sierraville on the Truckee road via Hobart Mills and camp by a stream (flowing north to Sierra Valley) 6 miles from Sierraville. The vegetation in this cañon is rank. It consists of Populus brandegeei, Prunus emarginata, Populus trichocarpa, Abies concolor, Pinus ponderosa, Amelanchier alnifolia, Ceanothus velutinus. On high slopes which have been denuded of forest the replacement is mainly Ceanothus velutinus with some Prunus emarginata and Arctostaphylos patula. The conifers do not appear to come back when Ceanothus velutinus has seized an area. One sees these burned spots, like huge green scars, sometimes quite destitute of even scattered trees, sometimes with burned masts still standing to show they were once forested, from the old Lemmon home near Sierraville, on the high mountains southerly.

No. 8055. Senecio triangularis Hook. var. trigonophyllus (Greene) Greenm. In meadow, in thicket.

No. 8056. Senecio serra Hook. var. integrisculus Gray. With 8055, mixed with it. Remarkably alike in every way except in leaves. at camp, south of Sierraville.

No. 8057. Senecio = Descurainia richardsonii ssp. incisa incisus Engelm. var. sonnei Rob.

No. 8057a. Ceanothus prostratus Benth.

No. 8058. Senecio serra Hook

In a now dry meadow but with a streamlet seeping through the middle, about 3 miles northeast from Lake Independence. Aug. 19. 6600 ft.

No. 8059. Gentiana Newberryi Gray. 6600 ft. With 8058 Aug. 19. Corolla with bell-shaped throat and limb, whitish or very light blue as one looks down upon it in the grass, its lobes mucronate. Appendages very large, laciniate, 2/3 as long as the lobes. Throat (inside) with a pair of longitudinal greenish bands

Lake Independence, in a meadow about 3 miles NE. of lake.

opposite each lobe. Lobes outside with a broad slate-brown band running down the throat and tube (or car. outside with 5 longitudinal bands ending on the tips of the lobes). Stamens and anthers approximating in center.

No. 8060. Tofieldia glutinosa ssp. occidentalis (Wats) C.L. Hitchc.

No. 8061. Gentiana simplex Gray.

See p. 55.

No. 8062. Carex

No. 8063 (Discarded, insect damaged)

No. 8064. Aster Andersonii Gray

No. 8065. Zygadenus venenosus Wats.

No. 8066. Pedicularis attollens Gray.

8067. Carex

In the lowest sumps in the meadow, now dry; forming pure colonies

6600 ft. Nevada Co. Aug. 19, 1918.

No. 8068. Carum Gairdneri Gray.

This umbellifer whitens the meadow.

No. 8069. Polygonum

Bed of now dry pool in the meadow.

No. 8070.

No. 8071. Carex nebraskensis Dewey

No. 8072. Artemisia tridentata ssp. tridentata

Dry hills

No. 8073. (Chrysothamnus) Haplopappus Bloomeri var. angustatus Gray with 8072. Disk-flo. 7 (6 or 5); rays 1 or 2. Odor not markedly unpleasant as in the plant below Fandango Pass (No. 7839).

No. 8074.

At camp south of Sierraville.

- Gentiana no. 8061, Cont. Petals 4, blue; lobes only minutely serrate!!

Near Lake Independence, Aug. 19

– While we were working the meadow described on the previous page, down on our hands and knees most of the time, Dutton glanced down the meadow and there at the other end were three deer, under a Juniper tree coolly regarding us, a full-antlered buck, a doe, a last years buck. As soon as we rose they trotted easily across the meadow, leaped a barb wire fence with an easy graceful dancing motion that was wonderful and passed up the hill thru the open forest. Dutton went after them with a gun but failed to get within shooting distance.

We go on southeasterly, pass Hobart Mills, a fine clean mill town, where we buy better groceries, at lowest prices, than can be bought in a San Francisco retail grocery at

Tahoe City, Aug. 20, 1918. 6250 ft.

a very much higher price, lunch beyond Prosser Creek, into Truckee, thence to Tahoe City, finding the road blocked for the time by a public road-building auto truck with a crew of loafing men who are in hot controversy with an auto traveler over the right of way.

6250 ft.

No. 8075. Cordylanthus tenuis Gray. Tahoe City

No. 8076. Cirsium

Flowers a luminous red pink. Tahoe.

No. 8077. Gayophytum ramosissimum T. & G. Tahoe City.

No. 8078. Mimulus torreyi gray. Tahoe City.

No. 8079. Aster integrifolius Nutt.

6250 ft. Rays purple. Tallac.

No. 8080. Spiranthes romanzoffiana ~~folia~~ folia Tallac. End of lip weakly dilated, so ⟹. Proc-

Tallac, El Dorado Co., Aug. 20'18. Lake Tahoe 6250ft.

esses at base of lip prominent, tit-like. Tallac. Meadow.

No. 8081. Juncus latifolius Buch. orthophyllus Cov.

No. 8082. Juncus balticus Willd.

No. 8083. Carex subfusca Boott

No. 8084. Mimulus primuloides Benth.

No. 8085. Gentiana simplex Gray. Corolla blue, its lobes at apex roughly laciniated.

No. 8086. Trifolium repens L.

No. 8087. Osmorrhiza nuda Torr. var. divaricata Jepson.

No. 8088. Gentiana amarella L.

No. 8089. Potentilla douglasii Greene. =Novekia fusca Lindl. Petals white, rotately spreading.

— Went from Tallac to Fallen Leaf. Here I was met by the Peirces of Stanford who took me to their cabin, "Camp Up Top", on the hill above Fallen Leaf Lodge.

— Arctostaphylos patula is common in this district. Its bright green leaves and its habit are very uniform. I have never seen the slightest variation that could be noticed by the eye. It is a wonderfully uniform species thruout its range.

Aug. 23.

— We drive today to Grass Lake and thence over Luther Pass, a low and slight or narrow (transversely) divide, to Hope Valley. This is on the eastern slope of the Sierra Nevada and a rather open sagebrush valley, but with coniferous slopes. The floor is meadow of considerable extent. Thru the valley flows the West Fork Carson River.

Cont. p. 64.

No. 8090. Eriophorum gracile Koch. El Dorado Co. whitening the meadow in spots at Grass Lake. 7800 ft. near Luther Pass.

No. 8091. Mimulus Tilingi Regel. Det. A. I. G.
Palate very strongly developed. Carson Pass. 8200 ft.

No. 8092. Eriogonum spergulinum var. reddingianum
Covering sandy-gravelly spaces with a filmy covering very abundant. 8200 ft.

No. 8093. Muhlenbergia filiformis (Thurb.) Rydb.
This grass grew with 8092

No. 8094. Agrostis variabilis Rydb. (Det. B. Crampton, 1972)
This grass was with 8093.

No. 8095. Agoseris cf. glauca
This composite seems as if somewhat dwarfed or depressed by the close grazing condition of this passageway across the mountains. 8200 ft.

No. 8096. Polygonum 8300 ft.

No. 8096a. Gayophytum 8300 ft.

No. 8097. Juncus balticus Willd. ~~var.~~ var. montanus Engelm
Meadow. 8300 ft.

No. 8098. Carex
8300 ft. Meadow, rather dry.

No. 8099. Polygonum davisiae ~~Brown~~
8500 ft. Common in the pass, forming colonies, most of which have now colored (red-brown) foliage.

No. 8100. Lupinus lyallii Gray var. villosus Jepson. Cor. blue-purple. Large white spot on banner. Sandy spots 8300 ft.

No. 8101. L Aster occidentalis
Rays ssp. blue. 8400 ft.

No. 8102. Holodiscus ~~discolor var. dumosus Dippel. var.~~ microphyllus ~~Jepson~~ Rydb.
8500 ft. Right in the pass, masses of shrubs 2-4 ft. h. in rocky places.

No. 8103. Aster integrifolius Nutt.
8200 ft. Rays purple. Grassy mdw.

No. 8104. Potentilla douglasii Greene. =Horkelia fusca Lindl.
Petals white, cuneate, truncatish. 8200 ft.

62 Carson Pass. 8500 ft. Alpine Co.

No. 8105. Potentilla gracilis Dougl. var. hallii Wolf. Petals yellow. 8300 ft.

No. 8106. = Senecio fremontii var. occidentalis Gray Rays 7, 8, 8, 7, clear yellow, not orange but a true light yellow. In the rocks. 8450

No. 8107. Agrostis variabilis Rydb. (Det. B. Crampton, Mar. 1972) This grass grew in sandy bottom soil in the pass. 8400 ft.

No. 8108. Aster This grass grew with 8107

No. 8109. Haplopappus Bloomeri Gray Rays 3 or 4, clear yellow. 8500 ft.

No. 8110. Gayophytum Sandy bottom in the pass. 8500 ft.

No. 8111. Mimulus Lewisii Pursh. Moist places. 8300 ft.

No. 8112. Epilobium alpinum L. See page place.

No. 8108 Aster mtd. earlier but cannot be located (it may be out on loan). There is another #8108 Agrostis scabra which will be numbered 8108a.
M. Hirano
8-13-72

Carson Pass
Alpine Co.

Aug. 23, 1918.

No. 8113. Haplopappus eximius H.M. Hall det. R. Bacigalupi - 2/24/64
8300 ft. In crevices of the rocks.

No. 8114. Ribes montigenum McCl.
Berries bright red 8300 ft.

No. 8115. Rumex utahensis Rech. f.
8300 ft.

No. 8116. Sagina saginoides (L.) Karst. var. hesperia Fern.
Moist ground. 8200 ft.

No. 8117. Senecio triangularis Hook. var. trigonophyllus (Greene) Greenm.
8200 ft.

No. 8118. Senecio triangularis Hook. var. trigonophyllus (Greene) Greenm.
8200 ft.

No. 8119. Epilobium obcordatum Gray.
8000 ft.

No. 8120. Chrysopsis breweri
8000 ft.

No. 8121. Carex spectabilis Dewey
8000 ft. Dryish bottom of cañonlet.

No. 8122.
Steep rocky wall. 8000 ft.

No. 8123. Phacelia frigida Greene.
8000 ft. Steep rocky wall.

No. 8124. Delphinium glaucum Wats
8000 ft. 3–5 ft. h. Carson Pass,

No. 8125. Ranunculus aquatilis L.
West Fork Carson River,
in Hope Valley. 7200 ft.

– Parnassia grows
at Woods Lake, a little below Carson
Pass, west side. Cont. from p. 59.
– The meadow floor is bordered, on the
lower slopes of the mountains westerly by a series of groves of Populus tremuloides, the groves very dense and with sharp distinctive borders, a larger amount of aspen than I have ever seen elsewhere in California. The groves are pretty and somewhat remarkable because this one or that one has an individual outline. This outline in each case is controlled by the seepage areas below springs.

– we pass thru Hope Valley and go on up into Carson Pass. This is a fine experience. The road winds higher and higher above the green meadows extending in towards the pass. The trees of Pinus monticola and Abies magnifica are quite fine, the latter wonderfully loaded in their very tops with cones. One tree with shattered or flattened top has about 100 cones, all within a foot or so of the tabular top of the tree. A little higher we get fine trees of Tsuga mertensiana 125 feet high. Also Populus tremuloides well developed. In the pass I notice a large Juniperus occidentalis; its trunk at 4 feet is 6 feet 1 inch in diameter! A stump of a tree is marked "Kit-Carson Tree", but there is probably no special significance in that, other

than this, that Carson came thru the pass or at some point very near it. The Fremont Expedition came up the West Fork Carson River and most naturally would have kept going up the Hope Valley meadows which would have led them them away from Luther Pass (which is lower than Carson Pass) to the neighborhood of the present Carson Pass. They might have crossed at some point a few miles south but certainly not far south of the present Carson Pass. It seems best to suppose that they came over the present Carson Pass. This was likely an Indian-used pass and would have been pointed out by the Indians. It seems most unlikely they came thru Luther Pass since in that case Fremont would have had a view

of the great lake (Tahoe) which he would not fail to have mentioned in his narrative. He came down the American River to Sacramento (Sutters Fort) and could not have crossed the divide south or much south of Carson Pass.

The Carson Pass is picturesque by reason of its rocky character, being guarded south by Round Top and Elephants Back and north by Red Lake Peak.

We drive thru the Pass and down the west slope a mile or a little more, camp, and lunch. Most of the party walk ½ mile to a small body of water, Woods Lake.

Pinus Murrayana and monticola, Juniperus occidentalis, Abies magnifica and Tsuga mertensiana occur right in the pass at summit.

Mt. Tallac, Lake Tahoe.

No. 8126. Lericocarpus rigidus Lindl.
6600 ft. Bays white. Fallen Leaf.

No. 8127. Quercus vaccinifolia Kell.
7500 ft. Covering the middle slopes of Tallac, forming dense thickets with even tops,— sometimes seeming nearly as smooth as a lawn if viewed at a little distance. 3-4 ft. h.

No. 8128. Rhamnus rubra Greene. ssp. obtusifolia (greene) C.B. Wolf
See p. 71. Berries red at this stage. Do they get black? 7500 ft.

No. 8129. Amelanchier alnifolia Nutt. 7500 ft. This is now spotting the slope with small dabs of yellow- the leaves turning a straw yellow.

No. 8130. Symphoricarpos
Berry slender, white. 7500 ft.

No. 8131. Zauschneria californica ssp latifolia tomentella Greene. ~~var. tomentella Jepson.~~
7500 ft.

No. 8132. Arctostaphylos patula Greene. Very common on the slopes. 8000 ft.

No. 8133. Arnica
9000 ft. Forming colonies 4 to

15 feet square or more, and pure.

No. 8134. Gentiana calycosa Griseb.
Corolla deep blue, especially the lobes, the lower half of which are closely dotted. Moist places, shelter of shrubs and trees. 8000 ft.

No. 8135. Ribes montigenum McCl.
4 ft. h., widely spreading
bush; berries crimson. 8000 ft.

No. 8136. Arctostaphylos nevadensis Gray. 8000 ft.

No. 8137. Arabis platysperma Gray.
8500 ft. Gravelly and rocky slopes.

No. 8138. Spiraea densiflora Nutt.
Flowers rose-pink. 8500 ft.

No. 8139. Eriogonum umbellatum var. umbellatum
9000 ft. Fls. sulphur-yellow. Rocky slopes.

No. 8140. Eriogonum incanum
9000 ft. Fls. pale yellow. Rocky slopes.

No. 8141.
Stems very white, shining white through their close dense woolliness. Leaves very green. Heads yellow. 9600 ft.

Mt. Tallac, Lake Tahoe

No. 8142. Polemonium parvifolium Nutt. Between boulders, 9700 ft.

No. 8143. Phacelia frigida Greene. Between boulders, 9700 ft.

No. 8144. Erigeron compositus var. glabratus Macoun. Between boulders. Rays none. 9700 ft.

No. 8145. Carex straminiformis Bailey 9500 ft. Now dry rocky slope.

No. 8146. Juncus drummondii E. Mey.

No. 8146 a. J. parryi Engelm. " 9500 ft. With 8145.

No. 8147. Carex luzulaefolia W. Boott With 8145.

No. 8148. Potentilla glandulosa Lindl. var. reflexa Greene. With 8145.

No. 8149. Cirsium With 8142.

No. 8150. Senecio scorzonella Greene 9000 ft.

No. 8151. Juncus nevadensis Watson 9000 ft.

No. 8152. Aster integrifolius Nutt. 9500 ft. High rocky slopes. Rays purple.

Eldorado Co. Aug. 25, 1918.

No. 8153. Monardella odoratissima Bth. ssp. pallida High rocky slopes. 9500 ft.

No. 8154. Rays 8, 8. 8500 ft.

No. 8155. Ligusticum grayi C. & R. A highly aromatic umbellifer. 8500 ft.

No. 8156. Holodiscus discolor Maxim. var. dumosus Jeps. 9000 ft. 4 - 5 ft. h. Rocky rifts

No. 8157. Eriogonum wrightii A beautiful species. Growing on a rocky wall. 6800 ft.

— The middle slopes of Mt. Tallac are covered, southerly, by chaparral of Arctostaphylos patula Greene; Symphoricarpos no. 8130; Rhamnus no. 8128; Amelanchier no. 8129; and especially by Quercus vaccinifolia. [The chipmunks are now harvesting the nuts of this species. At Tahoe I noticed the chipmunks eating the kernels of the fruit of Ceanothus velutinus.]. Ceanothus cordulatus

also occurs on this slope as well as Arctostaphylos forming its usual rough mats. — From the summit there is a fine view of Lake Tahoe, Fallen Leaf Lake and the immediate country. Also a highly satisfactory survey of the high Sierras. Far southward is the Yosemite group of peaks — I make out Lyell, Dana, Ritter and perhaps Banner. Nearer is Tower Peak. Nearer, the group of peaks about Sonora Pass. Nearer still the peaks about Carson Pass, very readily identifiable. Freel's Peak east shows up well. Far north is McKeesick Peak above Honey Lake. A group of high sharp peaks occurs a little west. Nearer, apparently about halfway is a high ridge with six sharp and about equal peaks on it. Further west and apparently on the west slope of the Sierra and very far in the distance is an isolated sharp peak with still another one, still further away beyond it, equally high and equally sharp, with heavy shoulders on it.

One gets a highly satisfactory view of the topography of the Sierras in this region from Tallac summit.

— [Cont. from p. 8. From Silkey we follow the South Fork Pit River, finally entering the narrow gorge which gives a pass thru the lava to the floor of the round-bluey Jess Valley which is plainly an old lake bed. On the way in we stop at a spring flowing out of the lava, in the pass, right by the road. The water is wonderfully cold and the spring is said to be a famous one.]

Heather Lake, above Fallen Leaf.

No. 8158. Parnassia palustris var. californica Greene. El Dorado Co.
Moist steep slopes, Grass Lake above Fallen Leaf.

No. 8159. Bryanthus Brewerii Gray. = Phyllodoce
Moist steep slopes, Grass Lake.

No. 8160. Gentiana newberryi Gray.
Corolla with erectish or little-spreading lobes, whitish or merely blue-tinted faintly. Appendages conspicuous. Staining the short meadow grass near Grass Lake above Fallen Leaf, very interesting when abundant.

No. 8161. Gentiana calycosa Griseb.
Very abundant near Grass Lake, on steep moist northerly grassy slopes. Corolla very deep blue, its lobes spreading.

No. 8162. Streptanthus tortuosus Kell.
Granite clefts, Heather Lake.

No. 8163. Eupatorium occidentale Hook.
Rocky places. Heather Lake.

No. 8164. Smilacina racemosa var. amplexicaulis (Nutt.) Wats.
Moist flat by Heather Lake.

No. 8165. Mimulus Lewisii Pursh.

Aug. 28, 1918

Moist slope by Heather Lake shore.

No. 8166. Ledum glandulosum Nutt.
Moist flat, shore Heather Lake.

No. 8167. Cryptogramma acrostichoides R. Br.
Clefts granite boulders.

No. 8168. Senecio fremontii var. occidentalis Gray. ↑ loose
Rays 8, 7, 8, 8, 7, yellow.
Clumps in bottom the granite boulders.

No. 8169. Juncus mertensianus Bong.
Granite sandy flat

No. 8170. Deschampsia caespitosa (L.) Beauv.
This grass grew on the rocky shore of Heather Lake.

No. 8171. Carex

No. 8172. Erigeron compositus var. glabratus Macoun.
Rays white, fading pinkish. Granite chinks. Desolation Valley.

No. 8173. Arabis lemmonii Wats.
Granite, Desolation Valley.

No. 8174. Aster Andersonii Gray
Rays lavender. Granite sand. Deso-

Heather Lake, above Fallen Leaf Lake
El Dorado Co.
lation Valley.

No. 8175. Scirpus criniger Gray.
Heather Lake, meadow above

No. 8176. Juniperus communis L.
Creeping over the rocks, granite
Desolation Valley

No. 8177. Delphinium glaucum Wats.
Heather Lake. 6 ft. h!

No. 8178.
This fern grew on the shores of Heather Lake.

No. 8179. **Chrysopsis Breweri Gray** Stems numerous from the one compact but fairly large crown of a stout woody tough root. Rocky shore of Heather Lake.

No. 8180. Hieracium horridum Fries
Woolly tufts in the granite clefts.

No. 8181. Populus tremuloides Michx.
brown sprouts in the new trail around Heather Lake. It is most remarkable that these leaves

should simulate so closely Populus trichocarpa. At first sight I thought the shoots were P. trichocarpa and had to convince myself they were not. P. tremuloides grew all about, there was no P. trichocarpa and the clumps were developing the normal leaves of P. tremuloides. beginning to

No. 8182. Sorbus californica Greene
Suzy Lake. 5 to 8 ft. h.

No. 8183.
Rays purple. Suzy Lake.

No. 8184. Allium validum Wats.
Suzy Lake.

No. 8185.
Glen Alpine Springs. 3-4 ft.

No. 8186. Helenium Bigelovii Gray
Meadows, Glen Alpine Springs.

No. 8187. Quercus vaccinifolia Kell.
Suzy Lake.

Eldorado Co

No. 8188. Juncus xiphioides Mey.
By spring in Strawberry Cañon bottom a little this side of Sugar Loaf.

No. 8189. Aralia californica Wats.
5-7 ft. h.

No. 8190. Baccharis.
3-4 ft. h.

No. 8191. Prunus emarginata
Crown sprouts after fire

No. 8192. Habenaria elegans Jepson
~~var. elata Jepson~~. In brush, s. side cañon near pass into Contra Costa Co.; (Telegraph Cañon)

No. 8193. Physocarpus capitatus Kze. Oct. with 8194.

No. 8194. Cornus californica C. A. Mey.
Oct. Telegraph Cañon.

No. 8195. Symphoricarpos
Oct. Telegraph Cañon.

No. 8196. Aesculus californica Nutt.
Oct. Telegraph Cañon.

– Calif. Collector. Mrs. R. F. Bingham. Cf. Flora near Santa Barbara, Cal., in Bot. Gaz., 12: 33-35. Cf. also p. 67.

– There came in today (one of my former students) C. N. Forbes, in charge of the Herbarium, Bishop Museum. He has been in ill health but is now well and on his way back to Honolulu. The botany of the islands fascinates him. He says the introduced Bread-fruit Tree is very much used by the lower orders for food.* – Sept. 13, 1918.

– Prof. Vaughn MacCaughey of the College of Hawaii called five or six days ago. He gave a very interesting lecture, illustrated, before the Calif. Botanical Society last week. He is now on his way back to the islands. – Sept. 13, 1918.

– On Friday evening, Oct. 4, I dined with Mr. & Mrs. S. B. Parish who had as guest Forrest Shreve. I had never seen him before, – tall, angular features, prominent nose, spectacles about 43 I imagine, very pleasant.

* He also exhibited the Banana in native since found on the wildest cliffs.

– John Torrey. – He came on a visit to California twice. A cousin was Lewis Gunn, editor of one of the newspapers in Sonora in the 50's. His daughter or one of them married Marston, the San Diego merchant. Miss (Elizabeth) Marston married my friend W. F. Bade of the Pacific School of Religion. Mrs. Bade tells me that Torrey visited the Gunn family in San Francisco on one visit. The daughters of John Torrey made their home in San Diego. After their death Torrey's son and his wife occupied the (the sons') house awhile. After his / death the young Mrs. Torrey removed East. Mrs. Bade says that her aunt, who with her mother, was born in Sonora, remembers the name of Dubfield (cf. supra 35:106). I

dined last night at the Bade's and Mrs. Bade promised to try for some of Torrey's California letters. – Oct. 9, 1918.

Mr. Marston tells me that he thinks Mr. Daniel Cleveland came to San Diego as early as 1868.

– Wyeth & Nuttall. The journeys across the continent and their collections. Jour. Wash. Acad. Sci. 8: 457. A paper by W. W. Eggleston.

– Nuttall, Thos. His trip to Oregon in 1834. Jour. Wash. Acad. Sci. 8: 375.

– Orobanche. The Tahoe spms. of M. Annie Miller seem to be typical O. cumosa. Cf. plate in Fl. Bor. Am. The stout plant, as much as 12 in. h., Jepson 6196, of the lower valleys & hills may be quite distinct. I am calling it. var. fruticola, but it may better be a var. of O. californica on account of its short corolla lobes. The true O. californica C & S., type loc. S. F., may possibly be O. violaceum (Eastw.). The last occurs on Grindelia robusta var. platyphylla Greene at Farallone City, Setchell

Vacaville, Oct. 28, 1918.

"No. 8197. Asclepias speciosa Torr. On Alamo Creek near the Forest Bridge. = S. acutus Muhl.

No. 8198. Scirpus occidentalis Chase. Suscol Hills, Solano Co., 28 Oct., 1918.

Cal. Botanical Expl. — Whipple's crossing of the Colorado River is marked on the map in Ives Rep. Expl. Colo. River.

— Allium. The elaboration of an account of the Cal. spp. has given me much trouble altho I have worked out many satisfactory things. The suspicious things remaining are: Allium parvum is possibly same as Nar. andersonii of A. tribracteatum. Both types come from the same loc. I am treating both as vars. of A. tribracteatum since

the series of integrades is continuous. It may be that A. falcifolium var. Peirsonii Jepson is A. brewerii which I treat as a synonym of A. falcifolium.* Cf. A. parvum of Jones, Contrib. 10; 84, 86.

"No. 8199. Lasthenia

Dec. 16. This is fairly common now in an area of a few acres on the plains below the lower end of the Little Oak Farm. The heavy September rain, 3 or 4 inches here, started these things and they matured rapidly. Heads are nearly ripe on some plants. Spergularia macrotheca var. leucantha Rob. was in flower on the "alkali patch" the end of Sept. About 6 weeks ago I obtained a Baeria near Vanden, namely

No. 8200. Baeria

About Oct. 25, 1918.

---

* Var. peirsonii I now refer to A. brewerii as a var. But see p. 89.

Berkeley, Dec. 17, 1918

— Prof. Hall lectured before the Bot. Seminar last night on hay-fever plants. Such plants are all anemophilous, with small smooth pollen. This condition excludes the Gymnosperms. The worst Calif. plants are Artemisia heterophylla, Juglans californica, Ambrosia psilostachya, Franseria acanthicarpa and F. tenuifolia. Different persons react differently to the various species, a particular species being worse for one individual than another. [See p. 99.]

— There called today Hermann Knuche, botanical free lance. He is most interested in Plant Geography, has traveled all over Europe, Spitzbergen, Canary Islands, Porto Rico, etc. He has been 15 yrs at Univ. Montpellier with Flahault. He says they have fine colls. Mediterranean materials there. He has specialized on the flora

of the Balearic Islands, has a book ready for printing on them (delayed by the war) and is trying to demonstrate a lost-Atlantis connect up Canary Islands (on one of the high peaks a Ranunculus specifically same as on a New Zealand peak), New Zealand and the Pacific U.S. He is a highly entertaining conversationalist, has met all European botanists nearly, is a friend of Drechsler and the Zurich coterie, is an ardent admirer of Warming with whom he has traveled in Africa. He regards Warming as the truly great man of this time in botany. You feel his power and his greatness in his presence. Other men, some of them have great reputations, but — there Knuche waved his hands. He does not admire Engler and he paid his respects to the Berlin crowd for their superior arrogant ways. Knuche was born in San Jose, Cal., and yet

Harms corrected his English! Last year he travelled through the Appalachians of the Carolinas from Kentucky south. He raved, almost, over the beauty of the woods – the finest, the most beautiful forest in the world! 22 oaks in Carolina and everyone with a different coloration! And the beeches, linden and great poplars – Liriodendron tulipifera! What splendid trees. Each mountain valley has a different flora – in one chestnut, in another beeches, and so on. But in California from Oregon to San Francisco you find Madrono and Redwood in every cañon!

The three most remarkable Botanical localities in the world are: 1. The Appalachian forest of the South. 2. The Okefinokee Swamp on the border of Florida and Georgia at the head of the Suwanee River,

floating islands of Taxodium distichum which evidently made a strong impression on his mind; the flora of the Canary Islands, especially that on the Tertiary rocks.

Trucke is of medium height, black hair turning iron-grey, smooth-shaven finely chiseled mobile face and very pleasant-ways but an earnest manner. He is debating where to settle down! at Kew, Harvard or here! I suspect he is by now too much of a wanderer to settle. He is a rover, as he expresses it – a diaper about the Botanical establishments of the earth. He is a botanical free-lance, the finest type of one I ever met. — Dec. 19, 1918.

– Carpenteria californica occurs on the San Joaquin and Eastern R.R. at the station above Au-

berry called the Mission. The whole mountain side is simply white with it. This is "outside of Fresno"... When out of bloom it bears a strong resemblance to Umbellularia californica and you would easily mistake this species for a clump of that — of course looking at it when it is not close at hand." — Ralph Hopping, Dec. 29, 1918.

— Water-killing of shrubs. "I do not recall that Ceanothus cuneatus was ever killed by water but Arctostaphylos is so killed. Flooding will kill Quercus lobata and Quercus douglasii on the dry hills." — Ralph Hopping, Dec 29, 1918.

No. 8201. Scirpus

In drift on the beach at Antioch, San Joaquin River,

Jan. 5, 1919. Great masses of Tule roots, 4 to 6 feet long and half as thick, were stranded on the beach, having been brought down the river by flood from the tule islands. The river men speak of these masses as "float".

— Allium Cont. from p. 83.

Peirson 267, Rock Creek, is Allium breweri var. peirsonii; leaves flat.

Peirson 7, divide between Mt. Towe and Mt. Markham, leaves terete is A. fimbriatum. [Later: leaves in both terete!]

These two are too close. I feel that they ought to be conspecific and that the leaf difference is perhaps immaterial or illusory in dried specimens.

If so, var. peirsonii falls into A. fimbriatum, but I do

Berkeley

not know that the spms. cited by me in mss. Fl. Cal. (Ord mt., Jepson 5879, etc) are truly typical and certainly A. fimbriatum is not a simple species but contains more than one form. The working out of this will probably have to be left to the future. — W.L.J., Jan. 6. 1919. See p. 199.

Allium Nevadense Wats. We have no spms. and in particular none from Calif. Spms. from Jess Valley, Modoc Co., seem near but have flat scapes. These spms. I am calling A. nodosum Jepson but I suspect the range of variation may include this. In its crests this seems more A. anceps. — Jan. 11, 1919. See p.

*No. 8202. Gnaphalium (Discarded, insect damaged)
Cliff, S. F.

*No. 8203. Tanacetum
Cliff

*No. 8204. Agoseris (Discarded, insect damaged)
Cliff.

Cliff, San Francisco, Jan. 10, 1919. 91

*No. 8205. Erigeron glaucus Ker.
Has stolons!

*No. 8206. Fragaria chilensis Duch.
= F. chiloensis

*No. 8207. Mesembryanthemum algialerale Haw. Ovary-cells 8 in the two fls. examined.

— During Christmas week, 1918, I was at St. Helena. One day Mrs. Hunt, my neice, Dorris, and Miss Alice Wood, went to see an old lady who lives at the base of the wooded hill near the bridge over Napa River, on the way to Glass Mt. Her name is Mrs. Sarah Logan. She "knows every plant in the woods". Calls Psoralea physodes by the name Devils Shoestrings which is a fine name. She says the bees use the pollen of Manzanita

Moraga Ridge Jan. 25, 1919.

for brooding but not for honey. August flower is Grindelia.*

No. 8208. Sequoia sempervirrens Endl. Upper San Leandro Creek by Moraga Ridge. Pollen sacs mostly 3, rarely 4.

No. 8209. Arctostaphylos glandulosa Eastw. Wood spm.

No. 8210. Castanopsis chrysophylla var. minor Benth. Wood spm.

No. 8211. Adenostoma fasciculatum H. & A.

No. 8212 Pickeringia montana Nutt.

---

* She also referred to the blue-white honey of Hemizonia luzulaefolia, spoke of Chamaez as a honey bee plant, and said her chickens fed on Lotus glaber.

No. 8213. Cotula australis Berkeley streets, drawing. Jan. 14.

Berkeley, Feb. 1919.

No. 8214. Senecio vulgaris L. Berkeley. Jan. 15.

No. 8215. Prunus emarginata Walp. Cañon due east of upper end of Lake Temescal. Sharply defined colony. Obtained coming home from Pals Colorado ridge (Cal. Bot. Soc. trip.). — Feb. 16, 1919.

No. 8216. Rhamnus californica Esch. typica Wolf Redwood Cañon. Three sheets show leaf variation in size and shape. Each shrub had its own leaf shape pretty much. The shrubs were certainly conspecific in appearance and habit. Feb. 16, 1919.

Erica occidentalis

No.	at ground	Height
1.	11 in. circ.	8 ft.
2.	14 in. circ.	7 ft.
3.	7½ in. circ.	6½ ft.

Oakland ridge n. of Redwood Peak.

Vacaville, Solano Co. Feb. 22.

No. 8217. Dodecatheon patulum Greene.

This grew on the slopes of Rocky Peak, east slope, on the wettest, the most water-soaked clays, the seepage areas. Petals white, the bases and the anthers deep purple, a velvety purple, save for a transverse band of yellow across the anthers. Drawing from this material

No. 8218. Muilla maritima Wats. Anthers versatile. Fils. dilated a little towards base. Leaves fleshy, quite thick, but channeled on the upper side. Rocky Peak, with 8217

No. 8219 Lepidium nitidum Nutt. Vacaville. Sandy soil.

No. 8220. Zygadenus fremonti var. salsorus Jepson. Alkali field at the Little Oak Farm. Feb. 24.

Berkeley, 10, Mar. 1919.

— Mrs. J.A. Bettys of San Benito came in today, Mar. 10, 1919. She says that "wild buckwheat" is the most valued bee plant in her region, valued especially on account of its long season, the bees working on it all summer. She further says that there was none of it ten years ago and that now it is the most common species of bee plant. Another plant called by the cattlemen "Kale" comes only once in ten years. It makes a remarkably clear bright honey which does not change, no matter how long it be kept. [I suspect this last is Caulanthus tho it may be some other crucifer like Thelypodium. The first-named is Eriogonum fasciculatum Benth.

— John Torrey. Am. Jour. Sci. vol. 5, p. 1, — June 1873. Biograph. notice.

– J.B. McNair is working on Poison Oak. The poison is found only in the resin ducts. Resin ducts are not found in the stamens except in the lower part and the anthers and pollen are, therefore, free of the poison. Persons are not poisoned by pollen nor is the pollen carried on the wind since it is very sticky and will not shake off the flowers. There are no resin ducts in the disk which supports the nectary surface. Therefore there is a reason for the honey made from poison oak flowers by bees being innocuous as dealers claim or rather as Bee-Keepers say.

The leaves are most poisonous when colored. On turning from the poison oxydizes and the

falling leaves are harmless. The most virulent months are Feb. & Mar. when the young tender shoots appear, are easily broken and bleed sap profusely.

The poison is a polyhydrophenol with unsaturated side chain. It is insoluble in water, cannot be distilled because it is an oil which heat does not permit of distillation, and so it is difficult of isolation. Previous attempts at isolation have resulted in mixtures. It is soluble in alcohol, ether, gasoline and others of that series. In removing the poisonous oil from the skin alcohol is a good solvent providing enough is used to really remove it and not merely spread it. Mr.

McNair said he had published one or two preliminary papers (Journ. Am. Chem. Soc. 1916. Bot. Gaz. Mar. or Oct. 1918).

McNair believes in immunization after repeated exposure, as do J. Von Adelung, who worked on Poison Oak here, does not; but this is because of his own personal experience. Persons undoubtedly differ greatly in sensitivity and in degree or rate of immunization.

— Mrs. D. P. Barrows says that she went with Professor Barrows on his trips among the Cahuilla Indians, that she went right into the huts and sat for hours watching the Indian women at their work and waiting patiently for them to get into the mood to say a word or tell what they were doing or the origin of the

plants, they used in fibre work or ? materials for food. She said that they learned enough of the Indian ways to be able to subsist on the country and not starve, tho she would not want to keep it up very long.

— Hay-fever plants. Of course grasses are the chief causes of hay-fever everywhere; but the species other than grasses which cause it in Cal. are those mentioned on page 84. See also Science, 49: 284).

Hay-fever plants have:—

1. Wind-pollination.
2. Numerous fls.
3. Inconspicuous fls., without bright colors.
4. No scent.
5. Pollen formed in great quantities.

— Durand, E. work on Cal. botany. Cf. Sketch of botany, Basin of Great Salt Lake. 26 p. 1859 (Phila.)

Vacaville, Mar. 24, 1919.

No. 8221. Orthocarpus erianthus Benth. Lagoon Valley.

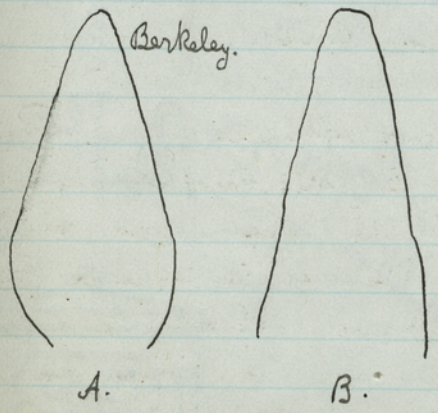
No. 8222. Lupinus affinis Lagoon Pass. Drawing from this material. = L. succedentus Dougl.

– Sambucus glauca Nutt. This is persistent in the Forse grain field – altho the field has been plowed for grain since 1853 or thereabouts! Frank Dickie, who now owns the field, says that farmers say the plant can be killed by plowing in August only. As this is just the very month when there is no plowing and none scarcely possible, it may be this is a "folk-lore" explanation.

See p. 148.

– Fasciation, – see no. 22-54.

– "Jack" (W.W.) Lyman says that he has in cultivation and in flower just now Trillium sessile from Lake Co. and that the petal shape, "B", is very different



from the shape of the Berkeley flower's petal. The Lake Co. plant has a petal like an arrow-head and is wine-red; it is quite long. The Napa Valley plant is white but it is of the Lake Co. type he says. The Berkeley petal is a darker red than the Lake Co. one.

Berkeley.

— Professor L. Blaringhem, Professor in the University of Paris and connected with the Pasteur Institute, with Madame Blaringhem, visited me today, bringing letters from Professor Sargent. He has come across the country via Florida and New Orleans and goes back to Harvard, where he is exchange professor, this winter. He has produced a corn with 2 embryos in 20-per cent of the kernels, a Capsella (C. vagaris) with 4 carpels which is fixed and which he says is spontaneous in his garden walks. His own special studies in heredity deal with heredity of disease mainly, especially "mosaic" diseases. He spoke very imperfect English and it was difficult to follow him closely. His wife speaks much better English and is a most charming and delightful young Frenchwoman. — Apr. 1, 1919.

Sw. slope above Mill Valley. } Mt. Tamalpais, Apr. 5, 1919.
Marin Co.

No. 8223. Ceanothus foliosus Parry.

No. 8224. Ceanothus cuneatus (Hook.) Nutt.

No. 8225. Ceanothus ~~rigidus~~ cuneatus (Hook.) Nutt.

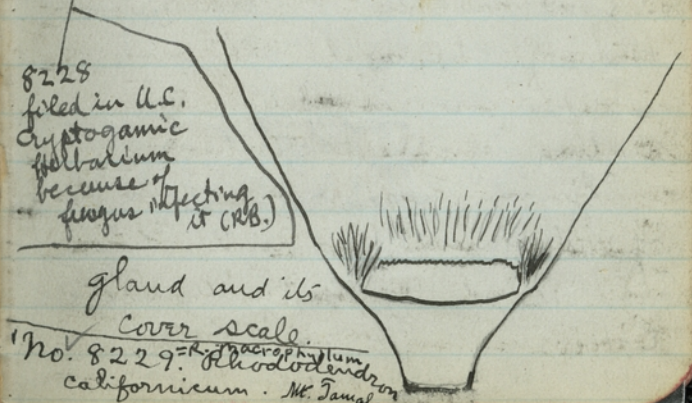
No. 8226. Calochortus umbellatus Wood.

No. 8227. Melica Torreyana Scribn.

This grass grew on an otherwise bare patch of sliding shaly rock area.

No. 8228. Eriodictyon californicum
See p. 107. Infested with Tomla glutinosa Cke + Hark.

— Calochortus umbellatus No. 8226.



gland and its cover scale.

No. 8229. =R. macrophyllum Rhododendron californicum. Mt. Tamal.

Berkeley

– Robert F. Griggs, Professor in the Dept of Botany, Ohio State University, called today. He is now Director of the Katmai Expeditions, National Geographic Society and is on his way back to Alaska with an expedition of twenty men. They will work again this year on the Valley of Ten Thousand Smokes where the volcanoes range in size from 20 feet across to small vents. The weight of a man may break thru a new vent; the thin spots being sources of great danger if 2 legs go thru. In addition to a great supply of provisions 1½ tons of chemicals are being taken in for use in determining the nature of the volcanic activities.

Griggs has worked on the flower of Platanus, his results having been cited by me in the Flora of California. Platanus has no corolla, certainly none in P. racemosa

so far as I could ever determine, and Griggs demonstrated its absence in P. occidentalis, altho figured in Engler & Prantl, Natür. Pflzfam. 3:2a:139, which figure is copied from Schönland who made up the petals because they ought to be there to conform to the theoretical plan of a flower!! cf. Bull. Torr. Club, 36:393.

– Salvia carduacea Benth. The proper filament is very short; it is continued upward and a bit outward (or spreading) into the main connective bearing a large anther. The other fork is the slender part of the connective and it stands at a right angle or nearly and bends around to the upper side of the corolla tube and lies alongside the anther on the short connective from the other stamen. These two small anthers, therefore, lie over one another horizontally and guard the upper

side of the entrance to the corolla throat. The small anthers are about ½ the size of the larger but are full of pollen!!

— Professor Dr. O. Laurent of the Academy of Medicine, Paris, and Surgeon of the Military Hospital Grand Palais, Paris, called on me today. He is the first man to perform an operation on the living human heart, put it back in the cavity, sew everything up, and have the patient live. He is also interested in plants because his hobby is longevity in organisms and he wants to know about reproduction in Sequoia. I tell him what I can and give him pictures. He is being taken about by Professor Chinard.

— "I like to undertake large pieces of routine work." — Edward Charles Pickering, the great astronomer. (Sci. 49:152).

— Erodictyon californicum. Foliage blackened by a sooty mold (conidial fungus). Cf. no. 8228. Horne, W.J. in litt. says: taxonomic status not yet worked out. Cf. his letter, Apr. 15, 1919.

— One of the important things for a botanist who is a productive worker must do is to publish. He must publish from time to time at not too long intervals, first for the inspiration, second because it clarifies his results, it places him in a position where he can see as he would not see otherwise. For me was obtained a fine, nay a splendid vision of what is to be done on the Silva of California, of what a really fine Silva would be like, — after my Silva was printed! I had the enthusiasm and a host of swarming ideas to produce something really worth while after the Silva appeared.

— The refusal of certain scientific

Berkeley,

papers by the Royal Society caused Smithson to change his will and leave his money to the U.S. (Sci. 49: 301).

– Recently it has become possible to do our work with animals the age of which are known. Working thus, at very turn, we find differences, distinct and definite, dependent on the age. – H. H. Donaldson (Sci. 49: 316).

– Came in for a call Mrs. Volney Spaulding, wife of the late Volney Spaulding, Professor of Botany in the University of Michigan. She has been with the Parishes recently and spoke of Mrs. Parish's outspoken and individual views. "I have opinions of my own" said Mrs. Parish, "I am an unfortunate woman!" It is, of course easier and more comfortable to think with the crowd. – Apr. 1919.

Hall's Valley, Mt. Hamilton Range.
1650 ft., 20 Apr. 1919.

No. 8230. Baeria
San Bruno Hills, Apr. 19.

Santa Clara Co.

Benth.

No. 8231. Orthocarpus floribundus
South San Francisco. Sacs deep, a heavy tuft of wool on the angles betw the sacs. Teeth rather long. Galea short: corolla 4 lines long; sacs 1½ lines deep. Apr. 19.

" No. 8232. Lupinus nanus Dougl. var. apricus C. P. Sm. Hall's Valley, Mt. Hamilton Range. Fls. purple; keel ciliate towards apex. Center of banner white with black dots on it. Open flats.

" No. 8233. Delphinium patens Benth
Hall's Valley, Mt. Hamilton Range.

" No. 8234. Orthocarpus erianthus Benth.
Hall's Valley, Mt. Hamilton Range.

Santa Clara Co

No. 8235. Plagiobothrys canescens Bth.

No. 8236. Trifolium tridentatum Lindl.
Cor. purple, the tip of wings white

No. 8237. Floerkea douglasii Baill.
Material used for colored plate

No. 8238. Lupinus albifrons Bth. var. collinus Greene. Lower calyx-lip, 3-toothed, upper deeply cleft. Keel glabrous. Cor. purple, the white spot on banner dullish and not pronounced. Plants cut off at ground. Ridge near Hall's Valley,

No. 8239. Gilia tricolor Bth.
Rocky outcrop.

No. 8240. Athysanus pusillus (Hook.) Greene.

No. 8241 Lupinus ~~microcarpus Sims var.~~ = L. densiflorus var. aureus densiflorus Jepson. var. menziesii
Cor. white

No. 8242. Pentstemon heterophyllus Lindl. Ridge near Hall's Valley, Mt. Hamilton

No. 8243. Layia
Marsh near Centerville.

No. 8244. Lasthenia, betw. conjugens and glabrata. Marsh near Centerville.

No. 8245. Nemophila menziesii H. + A.

— Juncus canaliculatus Engelm. The exact type locality for this is in Mill Creek Cañon just after you enter the cañon from the San Bernardino Valley floor, on the bank of the creek. — S. B. Parish, Sept. 1919.

— Carex spissa Bailey Forked spike. Teratology. Parish 4459, San Luis Rey River

— Variation. See Snow-flake patterns in Country Life, about Jan. 1920, or a month or so either way. See "The Evolution of the Snow Crystal" Mo Weather Rev. Vol. 47, no. 10.

No. 8246. Orthocarpus erianthus Benth.
This filled the fields north of Vallejo — a great abundance and very rank.

No. 8247. Iris missouriensis
This is now in full flower. A field or flat is full of it, near Rockville, right alongside the village. Perhaps 120 acres of it, on the valley level. Cont. on p. 114.

No. 8248. Carex tumulicola Mkze.
Rockville.

No. 8249. Trifolium olivaceum Greene
Sweeney Creek.

spm. discarded
No. 8250. Microseris douglasii (DC.) Sch.-Bip.
Sweeney Creek
subsp. douglasii
(det. A. Chambers, 1956)

No. 8251. Trifolium ~~columbinum~~ olivaceum Greene. Sweeney Creek.

No. 8252. Mimulus tricolor Hartw.
Cor. crimson, a purple spot

on each lobe, the folds yellow. Lower lobes very broad and rounded, short, the upper almost as short. Cor. 1 3/4 in. long, the tube very slender, 1 in. long. Throat very ample, inclined at a slight angle from the tube. Calyx teeth unequal, the upper the larger. Plate from this.

No. 8253. Delphinium variegatum T.&G. Sweeney Creek.

No. 8254. Ranunculus canus Benth.
Sweeney Creek.

No. 8255. Psilocarphus brevissimus Nutt.
Beds of dried pools. With 8254.

No. 8256. ~~Brodiaea~~ Tritelia hyacinthina
With 8254.

No. 8257. Floerkea rosea Greene.
Cor. pink-veined, fading or aging pink. Stamens with a glandular knob or swelling on the alt. fils. at base, those opp. petals not having any.
= Limnanthes rosea Hartw. With 8254.

No. 8258. Orthocarpus purpurascens Benth. Pleasant Valley.
Material used for colored drawing

V No. 8259. Populus Fremontii Wats.

Cont. 8247. Alamo Creek, at Foree Ranch.

Sepals oborate, obtuse, large, with purple veins or lavender veins; petals oblanceolate, notched at apex, lavender. Calyx tube 5 lines long. Pedicels 1 1/4 inches long. Flower 3 1/2 inches tall above the ovary.

K No. 8260. Vicia americana Muhl. var. linearis Gate.

Carnaderos Creek, on flat east of Powder Hill, Berkeley, about 1 mile. May 1919.

V No. 8261. Carex

Flat at foot of Thousand Oaks, Berkeley. May 1919.

– Teratology. Asclepias erosa. Most remarkable case of replacement of flowers by large buds. – Kenville, U.C. Herb. U.

Brandegee.

– H. J. Elwes, came in to see me today, May 6. He is a fine type of the cultivated and educated English farmer. His place is in Worcestshire. He introduced Larix occidentalis into England from America where it has done well. He put up the money for Elwes and Henry's Trees of Great Britian and made money out of the publication altho expecting it to be a loss. He has just come from the Santa Lucia Mts. and says he measured an Abies bracteata 160 ft. h. He was much amazed at its whip-like top or narrow top. He comes into bad from Japan-way. The Japanese showed him about the Japanese wood-workings in Formosa, showing him every consideration, putting him up at the hut-stations in the forest and feeding him good Japanese food. Being a

good traveler he got along well on it. He wanted to find out about the two kinds of camphor. It is said there are two kinds, a kind which crystallizes and a kind which does not, the former of course being the valuable kind and it is said indistinguishable botanically from the other. "But the Japanese are deep, oh, yes they are deep. They are very polite and tell you what you can see for yourself but not anything more. They tell you, however of their failures and it is more important often to know failures than successes because one can learn more from them. At any rate the Germans never told us of their failures; they covered all that up. Well the Japanese have a monopoly of camphor. You can't get along

without camphor and the Japanese will charge you what they will. You in the United States should grow camphor because it is your object within your own dominions to produce for your entire needs. In Japan Cryptomeria forms fine forests. It stump-sprouts abundantly. In England he has a larch (? Larix occidentalis) plantation on his farm, 20? years old which he sold for £90 per acre! for fir poles. He takes an interest in sheep, declared the mutton chops at lunch (I took him to the Faculty Club) were of Merino sheep, that Merinos always feed in bands, that his English cotswolds scatter out in feeding, that the red-brown Englishman's coat which he wore was from wool from his own sheep, was nearly natural color and shed rain almost like waterproof. He saw at a

Berkeley, May 1919.

London exposition, section of a Douglas Fir 375 feet high. He went back to the place where it was cut in Washington and tried to get confirmation but did not succeed. It is said to be very difficult to measure high trees in a dense forest. Elvas must be about 70; typical county Englishman. Talked entertainingly on a vast variety of subjects. He has a sheep and cattle ranch in Alberta and has trouble galore with coyotes.

– Parry, C.C., traveled on a pass in California. Was a college mate of Dr. J.B.D. Stillman, the physician of Stanford. In this way he secured a railway pass. At one time he had a pass for himself and one other, and took Parish to S.F. from Sana Bernardino, and to Arizona, on a botanical trip. — Sept. 1919.

Aldersey, Marin Co., May 17, 1919.

c. 400 ft.

No. 8262. Sidalcea malvaeflora Gray
Valley flat: White flowered.

No. 8263. Acer negundo var. californicum Sarg. San Anselmo.

No. 8264. Sidalcea malvaeflora Gray
Normal flowered. No hairs on the stem.

No. 8265. Carex densa Bailey
Wet flat:

No. 8266. Juncus phaeocephalus var. paniculatus Engelm.
Wet flat.

No. 8267. Agoseris grandiflora
Dry ground, valley flat:

No. 8268. Geranium dissectum L.
Wet low flat:

No. 8269. Juncus tenuis Willd. var. congestus Engelm.
Low flat:

Alderney. Marin Co., c. 400 ft.

No. 8270. Layia platyglossa (DC.) Gray. Low wet flat. This is very abundant on the flat but I did not see it on the adjoining hillside

No. 8271. Orthocarpus faniculatus Gray. Abundant on the wet flat

No. 8272. Hordeum californicum Covas & Stebbins. This grass grew on the wet flat

No. 8273. Briza minor L. with 8272

No. 8274. Silene gallica L.

No. 8275. Trifolium variegatum Nutt. Low wet valley fields

No. 8276. Wyethia angustifolia (DC.) Nutt.

No. 8277. ~~Brodiaea congesta~~ Dichelostemma pulchellum Low hill-slopes near valley flat. = B. pulchella Greene.

No. 8278. Layia gaillardioides H.+A. This is very common on the hillslopes and does not trespass on the valley floors where Layia platyglossa is abundant. I have never before seen so much of this. In places it forms sheets of color on the grassy slopes. Between Tocaloma and Olema there was a mile of color of it, on the open high hills. Rays as follows: 11, 12, 8, 13, 8, 8, 9, 13, 13, 12, 9, 14, 12, 11, 10, 12, 9, 8. Rays pure yellow.

No. 8279. Circaea alpina L. var. pacifica (Mag. & Asch.) Jones. Open flat that is free of brush, beneath Native Redwood. Paper Mill Creek bottom.

No. 8280. Carex nudata Boott

Forming heavy stools in scattered clumps along the waters edge, Paper Mill Creek. cf. F.B. 52:58.

No. 8281. Physocarpus capitatus Ktze.

No. 8282. Montia parvifolia (Moc.) Greene On disintegrating rock.

No. 8283. Platystemon californicus Benth.

No. 8284. Spergula arvensis L. Cult. field.

No. 8285. Linaria Cult. field.

No. 8286. Lotus formosissimus Greene. Wet ditches.

No. 8287. Wyethia (Discarded, insect damaged) Dry hillsides

No. 8288. Lupinus nanus Dougl. Dry hillsides.

200 Bl.

No. 8289. Lupinus formosus Greene. Dry hillside. Stems ascending.

No. 8290. Sidalcea malvaeflora Gray. with 8289.

No. 8291. Castilleia affinis H. & A. with 8289.

No. 8292. Ranunculus repens L. Petals golden yellow.

No. 8293. Lathyrus vestitus ssp puberulus Flowers lavender white, turning sordid.

No. 8294. Cytisus scoparius Link. This Broom is flowering most profusely on the hillslopes near the Country Club and appears to be spontaneous although it is not aggressive. One sees it in various places "just over the garden fence."

No. 8295. Veronica americana L.

No. 8295a. Bellis perennis L.

No. 8296. Lupinus arborens Sims. White-flowered.

No. 8297. Sisyrinchium californicum Ait. f. Wet slopes. Perianth yellow.

No. 8298. Polystichum munitum Presl. This fern grew in heavy stools as tall as my head or nearly, in the marsh about 3 mi. from Inverness.

No. 8299. Maianthemum bifolium var. Kamtschaticum gepsm. with 8298.

No. 8300. Ranunculus flammula L. with 8298

No. 8301. Corylus cornuta var. californica

No. 8302. Camassia leichtlinii Wats.

No. 8303. Iris douglasiana Herbert.

No. 8304. Luzula campestris DC. var. congesta ~~Mey.~~ Buch. = L. comosa E. Mey.

No. 8305. ~~Montia~~ Claytonia sibirica L.

No. 8306. Ledum glandulosum Nutt.

— The swamp, gently sloping hillside, in which were obtained nos. 8297–8306, lies along the Pt. Reyes light road, 2 mi. nw. of Inverness in an air-line. The sedges and the rushes come up in clumps or stools, with spaces between. Next comes in Corylus nostrata var. californica or species of Ribes, sect. Grossularia. Some other- cont. p.

Point Reyes (Sand flats). 90 ft.

No. 8307. Triglochin
swamp 3 mi. NW. of Inverness

No. 8308. Cerastium arvense L.

No. 8309. Linaria
Fls. blue.

No. 8310.
This gnaphaliod composite grew in the bottom of little swales on the sandy flats near the sea.

No. 8311. Trifolium macraei
H. & A.

No. 8312. Soliva sessilis

No. 8313. Cardionema ~~Pentacaena~~ ramosissima
~~H. & A.~~ (Weinm.) Nels. & Macbr.

No. 8314. Gnaphalium

No. 8315. Gilia capitata Sims ssp. chamissonis (Greene) V. Grant
~~Gylia chamissonis Greene~~ var. ~~regina~~ Jepson.
Stamens equal, equally inserted in the sinuses. All the flower parts glabrous except the calyx which is pilose on the upper part.

No. 8316. Baeria

No. 8317. = Horkelia marinensis (Elmer) Greene in Rock
Potentilla Kelloggii Greene
var. marinensis Jepson.
Stamens 10. Petals white.

Pt. Reyes (sand flats), 90 ft.

No. 8318. Layia carnosa T. & G.
Somewhat glandular above with hook-shaped glands, especially on the involucre. Disk-achenes strigose-pubescent or, rather, silky-strigose. Ray-achenes glabrous. *

No. 8319. Plantago

No. 8320. Layia gaillardioides H. & A.
Common on the sand-dunes and sandy flats. Rays yellow. Material used for colored plate

No. 8321. Madia gracilis (Smith) Keck

No. 8322. Cotula coronopifolia
San Quentin.
Material used for colored drawing

* Rays 1 line long. It is difficult in a case like this to say just where the "ray" part of the corolla begins

Cont. from p.
shrubs are less common: Myrica californica and Rhamnus californica. Ledum glandulosum is however rather common in the upper part of the swamp. Next, over the hazel bushes grow the stringers of Rubus vitifolius. The hazel forms a very even stand and seems as if it might be wind-controlled. The spaces between the original sedge-rush clumps are free and one can walk between as under the hazel in free passageways. The fern, no. 8298, formed heavy stools also, nearly as tall as my head and 3 feet in diameter.

But it seems reasonable to regard that structure as at least one line long. Material used for colored drawing

No. 8323. Trifolium barbigerum Torr.
May 18. Pt. Reyes sand flats.

No. 8323a. Ranunculus repens L. Euclid at. entrance limit. Cal. May 22.

No. 8324. Brodiaea grandiflora
Staminodes erect; anthers convivent in center. Benicia Hills,
May. 27, 1919. [= B. coronaria Jepson.]

— Mrs. Bertha Chapman Cady called today, May 31. She says A. A. Heller is teaching botany in the high school at Chico. She did not know that I knew him (!) and complained of his species mania, "he nearly drives me distracted". She recognized "species-splitter" when I said it. She tried to secure material for me from Mrs. B. M. Austin who has recently died, - letters and plants, but apparently the daughter Mrs. Bance who has been taking care of her mother and who helped her in her botanical work is not as clever as Mrs. Haile of Quincy

who rifled the trunk and took all or at least some of the letters to a botanist at Quincy, that is to the Forest Service Experiment station near there (I suppose). See pages 1-2 supra; also 35:167.

— J.W. Blankinship attended the annual meeting of the California Botanical Society in April. He is now expert for various smelter companies in their contests with farmers as to injury to crops and vegetation. He has a family and is at present living on Hilgard ave., Berkeley.

No. 8325. Clarkia unguiculata ~~elegans~~ Dougl.
Sliding shaly clay. Mt. Diablo.

No. 8326. Calochortus splendens v Dougl.
Petals clear lilac, with a few scattered hairs on the lower half. Gland like a low compact mass of icicles, or perhaps better a bit of heavy frost. Brushy hillslope.

Mt. Diablo, June 8, 1919.

south side of Mt. Diablo.

No. 8327. Cirsium Coulteri.
5–8. feet h., strongly branched.
Very showy plant.

No. 8328. Eriophyllum
Open slopes in the oak-brush slope, that is oak with patches of brush here and there.

No. 8329. Agoseris grandiflora
With 8328.

No. 8330. Salvia mellifera Jepson.
3 ft. h.

No. 8331. Mentzelia micrantha T. & G.
Petaloid stamens forming an outer whorl of 5, usually notched at summit. Petals yellow, 11/2 lines long.

No.	Petaloid.	Filamentous.
1	5	12.
2	5	10.
3	5	12.

Rocky slide. See p. 161.

No. 8332. Brodiaea (= Tritelia) laxa (Benth.) Watz. Adobe soil.

Berkeley to Yosemite, June 22, 1919.

No. 8333. Lotus (= L. purshianus) americanus Bisch. Mt. Diablo. June 8, 1919.

The trip to Mt. Diablo was up the southerly slope from the Mt. Diablo country club. Elevation reached, about 1300 ft.

— Left for Yosemite in my machine at 8:30 am Sunday, June 22, in order to deliver the initial lectures of the LeConte Memorial Series. With me went two of my assistants Miss A.E. Ehlers and Miss Helen Bergfried. Through Dublin came to Tracy, Oakdale, Chinese Camp, Jacksonville, Priest's Hill (which has now a comparatively easy grade), Big Oak Flat, Groveland, where we stopped all night at the Groveland Hotel. Next morning on via Crockers to Yosemite. The valley made the usual thrill on me when I saw it again for the sixth time.

Berkeley to Yosemite, June 21

No. 8334. Astragalus leucophyllus T. & G. = A. asymmetricus Sheld. Altamont Pass.

No. 8335. Datura meteloides DC. Sandy bank, San Joaquin River Bridge. = Mossdale School, San Joaquin Co.

No. 8336. Cyperus virens Michx. In overflow from irrigation ditch. Oakdale, west of.

No. 8337. Eleocharis palustris with 8336.

No. 8338. Asclepias vestita H. & A. Knights Ferry. Stanislaus Co.

No. 8339. ~~Clarkia~~ Godetia biloba Wats. Priests Hill.

No. 8340. Philadelphus Lewisii var. californicus Gray. Priests Hill, 2000 ft.

No. 8341. Astrastaphylos mariposa Dudley. Big Creek, 2600 ft. June 22

No. 8342. Mimulus moschatus Dougl. var. longeflorus Gray. Det: A.L.G. Big Creek, 2600 ft. June 22.

No. 8343. ~~Azalea~~ Rhododendron occidentalis Gray (Tuolumne Co.) Big Creek. June 22.

No. 8344. Panicum pacificum Hitchc. & Chase (Big Creek near Smith sta. = 2600 ft) This grass grew in moist Big Creek bottom.

No. 8345. Trifolium Big Creek.

No. 8346. Juncus obtusatus Engelm. Big Creek.

No. 8347. Luzula campestris DC. = L. comosa Big Creek.

No. 8348. Brodiaea multiflora = Dichelostemma Crocker's sta.

No. 8349. Brodiaea ixioides = Triteleia Crocker's sta.

No. 8350. Brodiaea gracilis Tamarack Flat.

No. 8351. Philadelphus Lewisii Pursh var. californicus Gray. Merced River, half-way to El Portal. June 19. = Merced Canon

No. 8352. Staphylea bolanderi Gray. With 8351.

No. 8353. Ceanothus integerrimus H. & A. var. californicus (Kell.) Benson Lobes of capsule low-warty. With 8351.

Yosemite Valley, June 28. 4060 ft.

No. 8354. Calycanthus occidentalis H. & A. with 8351. Mariposa Co.

No. 8355. Asarum hartwegi with 8351.

No. 8356. Asclepias speciosa Torr. Upper Yosemite Valley, in Black Oak wood near Yosemite Fall.

No. 8357. Erigeron strigosus Muhl. Meadow near Royal Arches, Yosemite

No. 8358. Carex feta Bailey with 8357.

No. 8359. Clarkia rhomboidea Dougl. with 8356.

No. 8360. Gayophytum ramosissimum T. & G. with 8356

No. 8361. Cyperus aristatus Rottb. with 8357.

No. 8362. Euphorbia serpyllifolia Pers. with 8357.

Yosemite Valley, mdw. near the Royal Arches [June 28, 1919]

No. 8363. Carex with 8357 Mariposa Co.

No. 8364. Juncus tenuis Willd.

No. 8365. Eleocharis acicularis R. Br.

No. 8366. Cyperus esculentus L.

No. 8367. Polygonum persicaria L.

No. 8368. Juncus bufonius L.

No. 8369. Eleocharis obtusa Schult.

No. 8370. Mimulus guttatus DC. var. arvensis (Greene) Grant. Det. A.S.G. = M. guttatus DC. — W.L.J.

No. 8371. Eleocharis acicularis R. Br.

No. 8372 Polygonum convolvulus L.

No. 8373. Danthonia californica var. americana (Det. Beecher Crampton, July 1922) This grass grew on the flat.

Yosemite Valley, near the Royal Arches, June 28

Mariposa

No. 8374. Phleum pratense L.
This grass grew in the dry flat of the valley with 8373

No. 8375. Hypericum formosum var. scouleri Hook.

No. 8376. Holcus lanatus L.
[det. Beecher Crampton, Jan. 1973)
This grass grew with 8374

No. 8376a. Agropyron subsecundum (Link.) Hitchc.
(det. B. Crampton, 1972)

No. 8377. Potentilla gracilis var. rigida Wats.
with 8374.

No. 8378. Trifolium pratense L.
with 8377.

No. 8379. Helenium Bigelovii Gray.
with 8377.

No. 8380. Lupinus latifolius Agardh
with 8356.

No. 8381. Prunus virginiana var. demissa
with 8356.

– Then was a good crowd at my first lecture, and an eager and appreciative one; a larger one at

the second lecture, still larger at the third lecture. The lectures were delivered in the open air in front of the Le Conte Lodge, amidst a truly fine setting of pines, firs, cedars and the great cliffs of the valley near at hand. Persons from many parts of the U.S. came up and introduced themselves, such as the Cushings and Underwoods of Boston. One lady stopped me as I came out of the dining room to say:– "We want to tell you how we enjoyed the lecture on Chaparral. We went wondering what any one could find in chaparral, let alone. Talk for an hour about it." But you not only talked for an hour, but went on saying new things – and there was very little repetition. – Many compliments came to me, but none quite so unique as this one.

Mariposa Grove, June 29.

Mariposa Co.

No. 8382. Iris hartwegi Baker.
Grouse Creek.

No. 8383. Lupinus grayi Wats.
Grouse Creek

No. 8384. Ceanothus parrifolius Trel. Chinquapin Sta.

Dichelostemma volubile

No. 8385. Brodiaea volubilis
Slender stem blow becoming thread-like in the ground.
Wawona.

No. 8386. Lupinus nanus Dougl. var. vallicola C.P.Sm. Wawona. Pine flat.

No. 8387. ~~Godetia~~ Clarkia dudleyana Abrams
Wawona.

No. 8388. Prunus subcordata Benth. Only a few of the fruits maturing. Wawona.

No. 8389. Chamaebatia foliolosa Benth. Mariposa Grove.

No. 8390. Deschampsia elongata (Hook.) Munro
This grass grew in the lower grove at Mariposa Grove

Fish Camp* to Mariposa, June 29, 1919.
(5900 ft.)

Mariposa Co.

No. 8391. Senecio triangularis Hook 141
Fish Camp.

= Horkelia fusca Lindl!

No. 8392. Potentilla douglasii Greene.
Fish Camp.

No. 8393. Carex ~~breweri~~
Mkze. Fish Camp.

= L. confertus Kell.

No. 8394. Lupinus lepidus Dougl. var. confertus C.P.Sm. Fish Camp.

No. 8395. Ranunculus aquatilis L.

det. A.L.G.

No. 8396. Mimulus Torreyi Gray.
Fish Camp.

No. 8397. Mimulus guttatus DC.
Det: A.L.G. By stream, moist bank. Fish Camp.

No. 8398. Colochortus venustus ~~Benth~~ Dougl. Miami Lodge. Open woods.

= Triteleia

No. 8399. Brodiaea ixioides Wats. var. lugens Jepson. with 8398.

No. 8400 Lupinus albicaulis Dougl. with 8398.

* Fish Camp, Miami, are in Mariposa Co.
See p. 171.

Mariposa Grove to Mariposa town
Mariposa Co. June 29.

No. 8401. Agoseris grandiflora
with 8398.

No. 8402. Wyethia elata H.M. Hall
This composite grew in colonies in the brush and is very showy and striking. Cedar Brook. (See p. 171)

No. 8403. Monardella lanceolata Gray. Cedar Brook.

No 8404. Collinsia tinctaria Hartw. Benth. Pl. Hartw. Cedar Brook.

No. 8405. Fremontia californica Torr.. Cedar Brook. One bush only, seen.

No 8406. Cirsium californicum
Cedar Brook.

No. 8407 Pentstemon azureus Bth.
Near Peterson Creek (head of).

No. 8408. Quercus douglasii H & A. Mariposa. June 30.

No. 8409. Eryngium castrense Jepson var. medium Jeps. June 30. Cathay foothills

Mariposa to Berkeley, June 30, 1918.

- Came out from Yosemite to Wawona. Thence up to the Mariposa Grove for a brief visit. Thence to Fish Camp, Miami Lodge, Cedar Brook. Below Cedar Brook, a bit, we came in view of a huge bowl-like hollow in the hills off to our left. As we skirted it, I felt that the road would lead down into it; but instead it slipped through a low pass to the right and (we) went on in the dark for an hour and a half to Mariposa town. From inquiry at Mariposa I judge the great hollow in the hills, as above noted, to be Fresno Flats, spoken of to me as Ahwahnee. From (over night at) Mariposa, we took the new highway via the Cathay foothills to Merced; thence via Modesto to Berkeley. It was getting toward 5 o'clock when we left Modesto but I made the run into Berkeley by sundown.

In Yosemite is a vendor of manzanita canes. These are as straight as can be — but they are cut by band-saws out of manzanita trunks. The vendor has a little open-air stand under the trees by LeConte Lodge. He manufactures his canes in the winter at Mariposa and I understood him to say that he brought into the valley a stock of 400 canes. He has two kinds, a light and a dark-colored. The light color is near cherry color. He uses for the two, two different kinds of manzanita, a dark-barked and a lighter-colored species. He says he can unerringly tell the two kinds of manzanita wood by the bark. He sells his canes (with crooks) at $20.00 apiece and has at this time only a few left. cont. next p.

No. 8410, Fimbristylis capillaris Gray

Mdw. near Royal Arches. Yosemite.

cont. from p.

The name of the vendor and manufacturer is U.C. Walsh, Mariposa, Cal.

No. 8410a. Sequoia gigantea cones. Tuolumne Grove.

No. 8410b. Same. Mariposa Grove, from the Grizzly Giant.

No. 8410c. Pseudotsuga taxifolia Britton. Near Crockers.

No. 8410d. Pinus ponderosa Dougl. Grouse Creek.

— White-top. A weed in irrigated grain fields at Morgan, Utah. What is it? asks Dean Hunt. Erigeron annuus does not, acc. to books, grow so far west, nor Sitanion. White-top, E. ramosus. — See p. 153.

— Chaparral Browse. — Deer meat in California is dry. Deer feed on the dry chaparral; they browse; they rarely eat green grass even if it is to be had. In the Eastern U.S. deer meat is much more juicy, due to difference in the herbage cropped.

– Dr. H. J. Webber says. – "I think it is established that Eucelia californica is a poison, a skin irritant. Preiser, at the Riverside station, unquestionably is poisoned and so is Swingle, a brother of Walter Swingle. Preiser "takes" on the forehead with a sort of rash; and this rash develops also on the back of the hand when rubbed with the plant. I have not determined whether it is an oil on the hairs. I myself am not susceptible." –

– A gentleman with Dr. Webber at lunch today, who has been in Java many years, says: "The coffee-beans which have been thrown the intestinal tract of a skunk-like animal in Java which feeds on the fruit and takes off all the soft part, these beans are gathered up in the forest where these animals abound and

carefully set aside from the ordinary beans as being very much finer and as making a coffee drink of vastly superior flavor." This matter came up thru the statement being made that coffee in value of product is the most important import into the United States.

Vacaville. Solano Co.

No. 8411. = A. fascicularis Done. Asclepias mexicana Cav.

No. 8412. Centaurea solstitialis L.

Common along the roadways, forming dense thickety growths and becoming abundant in the grain and hay fields. It is 1000 times as common as ten years ago, perhaps even six years ago. After the fields are cut for hay it springs up and takes possession, being so young at the time of the hay-cutting that it is not disturbed especially by the mower sickle. It takes the place

that used to be occupied by Madia
leptodactylon. I noticed no Madia
leptodactylon this July at Vacaville
(although not looking for it).

Persistence of Native Plants in cultivated areas in Vaca Valley.

- Sambucus glauca forms several thickets of new shoots from the ground in the Dickie grain field, formerly the Foree field. This field has been cultivated since about 1855, perhaps prior to that. Still the new shoots arise every summer. See p. 100.
- Asclepias mexicana. A patch of this is in the orchard half-way between Little Oak Ranch and Araquipa Hills. This ground has been cultivated for as long a period as the Dickie place. The Sambucus glauca patches above referred to I believe to

be the descendants of trees or bushes that grew on the spots in question in the days of Alta California. I can remember as a lad trees of this species that grew along the fence border that were undoubtedly remnants of the original stand on the valley floor.

- Asclepias speciosa grows in the same orchards with A. mexicana. The patches of it probably go back to pre-civilization days.
- Glycyrrhiza glutinosa. A patch of this in the pear orchard at Little Oak has been slowly increasing in area, until it now covers about 1/2 of an acre. I can remember this patch 35 years ago. It is probably primitive as also similar patches in the orchards west, towards the Araquipa Hills.

- Cont. Sida hederacea thrives under cultivation in the prune orchards where the soil is somewhat alkaline, as on the Dickie ranch. It seems to flourish best on the borders of the orchard and least in the orchard. In other words it is not shade-tolerant. - Cont. top. p. 151.

- Ralph Platt speaks of the Sallie Long place as being the most delightful home spot in Vaca Valley. In addition to its natural attractions it is always cool in summer since opposite the mouth of Gates cañon. As the breeze comes down the cañon it brings from off the mountain sides the odors of chaparral, of bay, of Christmas Berry and Chamez.

- Cont. from middle p. 150. Reflect the changes that have occurred in the matter of introduced weeds; I can remember as a child of six or seven when the Mayweed (or Dog Fennel, as we always called it; - Anthemis cotula L.) was a great pest, actually covering the land to the exclusion of all else, turning brown and dry and dead, and forming a sort of low thicket thru which the chickens and various animals made runways. Another weed in cult. fields was the pig-weed or tumble-weed, Amaranthus albus. It would loosen from the ground and the North wind would send it scurrying, piling it up in huge windrows against the fences.

No. 8413. Martynia proboscidea
Vacaville, July 30, 1919.

No. 8414. Artemisia ~~heterophylla~~ douglasiana Bess.
Telegraph Cañon, Berkeley.
As much as 6 ft. h! Aug. 15.

No. 8415. (Discarded, insect damaged) Anaphalis margaritacea
With 8415. Aug. 15.

No. 8416. Thalictrum
In brush on north slope. With 8415. Aug. 15.

No. 8417. Taraxacum officinale
In lawn at 2714 Benvenue Ave., Berkeley.

— Mrs. Mary F. Spencer who discovered Lycium Spencerae in Cajon Pass is a woman who looks quite young. She has the sort of skin and complexion which ensures the appearance of youth. She said one today to Mrs.

Parish apropos of something or other: "when you are as old as I am etc". Mrs. Parish retorted "Why, I am a great deal older than you are", for said Mrs. P. to me. Mrs. Spencer looks so young, tho' toothless apparently. "Actually" interrupted Mr. Parish, "Actually". Mrs. Parish laughed and admitted the correction: "Well, then, actually. But Mrs. S. simply replied and said: I am 80!" Probably Mrs. S. has the age record for field work at 80 years in California on the part of a woman collector. The Parishes are visiting me now. — Aug. 26, 1919.

— White-top (cont. from p. 145) is Lepidium Draba acc. A. O. Garrett, Salt Lake City, Aug. 25, 1919. On list proscribed weeds of Utah.

– A. H. Cockayne, head of the Dept of Biology of the Government of New Zealand, called to day. He said: "New Zealand owes a great debt to California for the Monterey Pine. It is our fastest growing pine and is replacing quite our own White Pine (Podocarpus dacrioides) for boxes, etc. We use Monterey Cypress a good deal for short telephone poles and find it very durable in contact with soil.

There are still large virgin forests of Kauri and they are very accessible. The oldest authentic age is 520 years. The forest grows of 20 or 30 trees amidst the general forest; and as they rise much above this general forest, which is 70 ft. high, the forest canopy as seen from above is quite uneven.

Monterey Pine makes a great yield. Trees 28 years old have cut 100,000 ft. B.M. to the acre! This beats in time anything our native trees can do."

Sept: 1919.

– Cont. from p. 90. Allium.

Peirson 267 has, in reality, terete leaves or semiterete; they are flat because of drying. Similarly the stems are terete and not flat, or at least they are thick and subterete.

Peirson 3 has flat leaves apparently in dried spm. but the collector's note says "leaves terete".

Peirson 1, has quite narrow leaves.

All the above are from the San Gabriel Mts. and all = A. fimbriatum.

– California explorers – Edw. F. Beale, a biography by Stephen Bonsal.

Berkeley.

No. 8418. Disporum (Prosartes) hookeri Torr.
Strawberry Canyon, making a fine show with its bright berries. Sept. 10.

— Last evening at the invitation of Dr. Smiley I took the Parishes with me to the Smileys for dinner. Dr. S. said W.E. Jones is seeking to sell his herbarium to the Univ. of Utah. The Univ. writes to Mrs. Brandegee for information as to its value who said that if they took Jones with the herb. to decipher his notes it might be well. Jones' price is $40,000.00. Mrs. B. says it may be worth $15,000 or $20,000. (100,000 spms.). It seems that the labeling is poor, data deficient, and often only notes written on the margin of the newspapers. — Oct. 8, 1919.

— Yucca whipplei, used for fiber in making brooms and brushes by a plant at Riverside. The

articles made were not very good, since the fibers curl when wet. — Oct. 8, 1919. Cal. Develop. Board Bull. Sept. 1919 speaks of the Desert Fiber Co. which produces 1 ton dry fiber per day. The fiber is shipped to Chicago. The juice is a by-product and is used in a toilet soap and a cleaning compound.

Solano Co. Vacaville — Oct. 16, 1919.

No. 8419. Helianthus scaberrimus
On the Dixon road near the Harbison ranch.

No. 8420. Marah[illegible] proboscidea Britt.

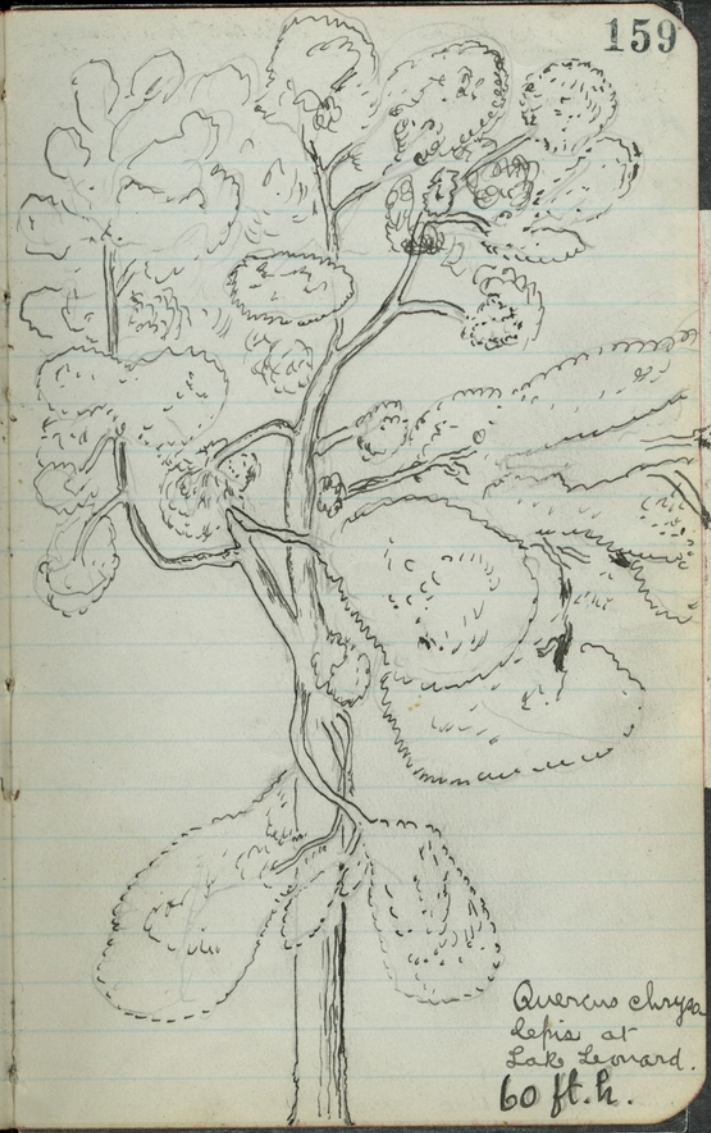
No. 8421. Eremocarpus setigerus Benth.

No. 8421a Hemizonia luzulaefolia DC.

— On Nov. 3 I drove to Ukiah with Col. A.J. Freeman and Father O'Neil. The mountain heights between Cloverdale and Hopland were very fine in the autumn colors of the oaks and the

Lake Leonard, Mendocino Range.
Nov. 4, 1919.

Fig-leaf maple, Quercus douglasii (acer macroph.).
was brick-red and furnished the deepest or rather the most intense color but Rhus diversiloba gave the most brilliant spots. The foil of the yellow hills and colored trees was the spots of Douglas Fir and California Laurel. Beyond Ballella we turned west and drove in (and climbed up to) Lake Leonard, see p. 162 a lakelet set in a cañon which has been dammed by earthquake disturbance I judge. This is right on the edge of the "bald-hills" country. To reach it we pass thru about 15 miles Redwood on the East slope. Beyond this east slope lies (westward) a zone of open hills, that is with bare areas and spots of oak and Douglas Fir and Laurel. The



Quercus chrysolepis at Lake Leonard. 60 ft. h.

autumn effects are very fine. The oak in this region is Black Oak (Quercus californica) and doubtless Quercus garryana. I did not notice any Quercus Douglasii. I suspect it is absent from this zone.

No. 8422. Taxus brevifolia Nutt. Tree 30 ft. h. Big River headwaters.

No. 8423. Pasania densiflora Oersted. Lake Leonard.

No. 8424. ~~Achlys~~ Achlys triphylla DC. Big River headwaters.

No. 8425. Brasenia schreberi Gmel. Lake Leonard, abundant.

— Susan Blake, speaking of Cercis occidentalis in Putah Cañon, says it does not occur in Berryessa Valley, nor westward to Howell Mt., nor in Napa Valley. It comes in again about Middleton and occurs in

Cold Creek on the road to Potter Valley. Its distribution is significant and must be worked out in greater detail.

— Ceanothus incanus is scattered all thru the Redwood country about headwaters Big River and I suppose it occurs thru the Mendocino Range generally. Its bark is always smooth, generally white or whitish, but on older trunks often brown.

— Cont. no. 8331. The plants were much branched from the base and forming low mounds 1 to 2 feet broad. My memory is distinct about it, tho the facts should have been set down at the time. For the insects taken on the herbage see E. C. Van Dyke in litt. Nov. 3, 1899.

— Cont. no. 8302. Perianth nerves often only 3, the segments tending to be separate on withering. I am putting this in C. leichtlinii but

it will go almost as well in C. quamash. This spm. illustrates the difficulty of keeping the two species separate in practice. The buds in 8302 are apparently not gibbous on one side at base.

— At Lake Leonard, ripe olives were served one day at dinner. They were a bit small-sized but as large as medium commercial olives. I noticed that they seemed unspeakably hard and slick as I touched them, as I took another from the dish in the center of the table. It was like the others. These "olives" were unicellular fruits which had been cleaned of their flesh and had lain for two weeks beneath the waters of Lake Leonard, thus giving them their desired color. So I, in

writing my "house party" letter to Mrs. Henry Boyle, said: "Tell Miss Boyle for me please that my botanical education was much promoted in her company, — especially in the matter of table olives. I knew these condiments in another guise, and I have seen them roasted and used as a delicacy by the Yokuts and other tribes, but I had never before met them just out of cold storage and divested of their upholstery."

Miss Una Boyle played many practical jokes on our party but none quite as clever as the "ripe table olives".

— Torreya californica, 6 ft. diam. at breast high, ½ mi. north of Swanton station on road to Pescadero, 200 yds from road on west bank Scotts Creek, that is across creek from the road. 125 ft. high. — R. C. Burton. Burton says there is a distinct

foliage difference between the male and female trees, the former having more pendulous branches. He thinks the extreme height of this species is 150 feet.

— Brandegee, Mrs. K. is an excellent collector, that is she collects many interesting specimens. See her spm. of Asclepias eriocarpa from Three Rivers with flowers, young erect pods, and mature arrect pods. Her labels are commonly insufficient but her spms. are usually good.

— Asclepias cryptoceras Wats. is attributed to "Calif." by Rydberg, Rocky Mt. Fl. Sonne collected it below Verdi which is very near the state line but he omits it from his list of the Truckee region as Californian. The mts., says P.B. Kennedy start up so abruptly into timber, that he thinks it could not occur

west of Verdi. Shockley collected it at "Summit" on the Carson and Colorado railroad not far from the Cal. state line in Mineral Co., Nev. Summit, says Grinnell, is just above (i.e. northeasterly) Queen's Sta., Nev., which is marked on the contour map. The species might well come into the White Mts. there. Asclepias galioides is similarly put in "Calif." by Rydberg. I have no line on this. It might well come into the eastern Mohave Desert.

— C. C. Parry collected at Lake Tahoe in 1888 (Aug). See label on Utricularia vulgaris L.

— Sonne, C. F., prepared a ms. list of the plants coll. by himself in Placer, Nevada and Sierra Counties, Calif., and Washoe County, Nevada, between the years 1878 and 1892. P.B. Kennedy had the ms. typed and has presented me with a copy. — 4 Dec. 1919.

— Professor A. H. Cockayne, Govt Botanist of New Zealand, is just in from his tour of the Eastern U.S. He says: "Washington is a huge place of scientific men but the atmosphere is very different from that of the Universities. Each man in (in Wash. is trying to build up) an organization with himself as the head of it. He is always apologizing for the kind of work he publishes by saying that the public or the congressmen demand certain things — which is mere excuse since the Government would really stand for fundamental work. Another curious thing is that none of the men want to be called a Botanist, all want to be something in title other than a Botanist. This is strange. Most or nearly all are weak on botany, the fundamentals of botany. One of the most striking cases in the country is that of agronomy. This

will not lead anywhere because it really rests in large part on taxonomy and the men do not know any taxonomy. It is amazing. Similarly the plant physiologists are often short on general botany. But the plant pathologists are the worst to shy at the word botany. Of all men at Washington Coville is the worst as to nomenclature. He is a rigid radical fanatic. He carries the idea to absurd extremes. Nomenclature controversy has done its share in ruining the idea of the word botany. It is not right that the bulk of botany should go out under special names and only the asinine parts left to botany.

At New York Botanical Garden I found Britton most delightful. He is a skillful politician and keeps things moving along. He is not so radical on the nomenclature business. But the N. Cen

Flora has committed itself to the Am. code although Britton does not go very far apparently individually. For example J.C. Arthur uses the U. Am. code in his parts on rust for the N. Am. Flora but he says he cannot and does not use the same names in everyday work and in other parts. Harper at Columbia seems easy-going though able; he has at the outside 12 or 14 undergraduates while at Philadelphia they have 400. Harshberger took me out to the New Jersey pine Barrens for a very delightful trip. Shull at Princeton is a very serious type of man, but B.E. Livingston at Johns Hopkins is very human; the latter does not wish to be called a botanist. He has a philosophical spirit-

that appeals to me. I spoke of this to J.C. Overton at Wisconsin, who evidently does not approve of Livingston's work: well he may be a philosopher; he is no botanist. New Haven is an agreeable place with Evans and Nichols. There is a New Haven branch of the Conn. Agr. Sta. (at Storrs) where I found Sinnott. ⟶

It is purely a research place, and this and Geneva made a most favorable impression upon me. They really carry out research. At Harvard the men are all at each other's throat. The Arnold Arboretum is at outs with the Gray Herbarium and the Bussey Institute (Wheeler). Both Wheeler and Sargent are well to do. So was Farlow. Thaxter is emeritus. Jeffreys is senior professor. He spends hours raving at the other men. For example Sinnott

on coming back to Harvard went to the Bussey Institute. By virtue of this he had to be against Jeffrey; that is he had to side with Wheeler and go against Jeffrey as a matter of course. Robinson at the Gray Herbarium is absorbed in delighted contemplation of the wonder, devices and mechanism of his herbarium; the plate glass-top tables, the fireproof arrangements, the steel sash to the window panes, and so on and on. Robinson serves as guide with the utmost delight.

At Brooklyn they have a fine botanical laboratory, the best this is because the latest, in the Brooklyn Botanic Garden. It must be good because Gager knows how to plan that sort of thing well. They have good men. Olive is a good man.

Of all the state institutions Wisconsin is very impressive. L. R. Jones is a fine botanist, of the best. He is a plant-pathologist but is turning out students with fundamental training."

(discarded) No. 8426. Prunus virginiana var. demissa Walp.

Cañon side east of Lake Temescal in Berkeley Hills. Sept. 1919.

— Pringle, C. G. See Am. Fern. Jour. 1:114.

— "California, Balfour, 1854".

Balfour collected Equisetum laevigatum var. Californicum Milde in California, acc. to Fern Bull. 11:114. This is the Balfour to whom the celebrated letters* concerning Jeffrey were addressed by his brother in Edinburgh. I did not know that the Balfour in California had ever collected anything here. {* All this erroneous.

— Cont. from p. 142. Since the road below Miami Lodge is entirely in Mariposa Co, Cedar Brook, altho near the Madera line must be in Mariposa Co. at the point where I collected. (Cedar Brook not found on any map.)

— Berberis, review of the Californian sp. The Pellejo Hills plant is repeated in the San Carlos Range (Lillis, Brewer) and on south ward. The Sierran plant is low (Old Colony Mill, Jepson 628) and I have called it B. pumila Greene. It occurs in Mariposa (Congdon) and Amador (Hansen 219), which are presumably low also. But Lillis' spec. is not distinguishable in key char. from these two, esp. the Hansen one. Further these low Sierran forms seem to be quite the same as Bartlett Mt., Lake Co., Curran, which I take to be the type of B. pumila. For convenience I am calling the tall inner Coast Range shrub B. armata. B. armata and B. pumila agree in few coarse spiny teeth. The Marysville Buttes plant (B. dictyota) was low as I remember but differs

in hue of foliage and somewhat in character from both B. armata and B. pumila. Possibly it is B. pumila. There there would be two species, B. armata, tall rigid shrub; B. pumila low + herb-like. However the technical distinctions are weak, too weak. — Jan. 6. 1920.

Baker's 464 Clover Creek, Shasta Co. is like Marysville Buttes essentially. Whatever the status B. armata represents a fairly definite thing; likewise B. pumila represents a fairly definite thing. B. dictyota I now refer to B. aquifolium as a variety — with some doubt, but as it is low and west it seems best disposed there and not as B. pumila —

10 Jan. 1920. Cont. p. 200.

— Lythrum species in Col. L. adsurgens is reduced to L. hyssopifolia by Koehne (in Pflz.) but it seems to me at least a var. tho

evidently no more. I find no L. album material from Cal. (to which Koehne reduces L. Sanfordii Greene). We have Pringle's 4122, Morelia, Michoacan, Mex., det. I suppose at Gray Herb. as L. album. Also cited as L. album by Koehne l.c. The diffs. betw. this and L. californicum spms. are not obvious. Koehne attributes L. album or forms of it to Stockton, San Diego and Sacramento. — I find no evidence that Aruncania latifolia or A. Koehnii are in Cal. Parish's A. Koehnii, Colorado Riv., is plainly A. coccinea. — 10 Jan. 1920.

— Fasciated stems, Dicentra chrysantha H.&A. W.L. Jepson, in U.C. Herb. Teratology.

— Aralia Californica. Range in the Sierra Nevada not known or obscure. There is only one Sierran spm. and that is State Survey, marked "Big Trees", probably Calaveras Big

Trees. At least Hall does not give it in his Yosemite Flora. I have a field record of its occurrence at Belden, Plumas Co. Hansen includes it in his list of the flora of Amador, Calaveras & Alpine cos. (Flora of the Sequoia Region). Bot. Cal. says Sierra Co., Lemmon. It does not appear to be in Eastwood's Mariposa list in Zoe. See p. 176.

— Eordylanthus. We have just been working over the species. Ferris in a paper in Bull. Torr. Club has mixed up things a good deal and made many errors but after all I think our second revision is better because of the badness of the Ferris paper. This may be said in partial extenuation of many species splitters. One has to go over their work much more carefully than they did themselves, which shows in ones' final results.

– "Big Trees" in the earlier days of the Survey, perhaps during the whole period of Brewer's collecting, Calaveras Big Trees. In a rapid running over of Brewer's State Survey Field Book I do not find any Arabis Californica listed as "Big Trees". See p. 175.

– Notes on Ceanothus.

C. perplexans Trel. In effect this is very close to C. greggii as represented by Purpus 2590 (Puebla, Cerro de Santa Lucia, Mexico), i.e. the leaves are about the same shape and size, and color. Entire in Purpus; denticulate in my 1464 perplexans. The venation is much the same in the two. The habitat of C. perplex. ans would be in harmony with a Mexican affinity.

C. integerrimus H. & A. A collection from Simpson's Ranch, Silvertwater Creek, El Dorado Co., May 18, 1907, K. Brandegee, has small pinnately veined

leaves like the type of the species (the plant of Douglas). This is sheet 101,842, as to 5 spms. "A" & "B". Spm. "C" on the sheet has tri-nerved leaves and even the small leaves are 3-nerved! There is no doubt that these spms. are conspecific. Sheet 101891, same collector, date & place; small leaves pinnate = "A". Larger leaved spm. = 3-nerved = "B". Spm. "C" is pinnate-veined but partly 3-nerved. All these look alike and are alike, except for the venation noted. I cannot doubt that the whole lot on the two sheets are conspecific. The small pinnate-veined leaves are like a spm. by Parry, Santa Cruz Mts., May 1886. (Labeled by Parry as C. Palmeri). This is C. andersonii Parry, i.e. the original form of C. integerrimus H. & A.! I cannot doubt

there is every transition to the large leaved 3-nerved state of the typical Deer Brush in the Sierra Nevada.

It is disconcerting to see how near the foliage of Parry's Santa Cruz Mts. spm. is to C. Palmeri. The latter is, however, thicker leaved and more shortly oblong, altho pinnately veined in the same way. Is C. andersonii an intermediate between C. Palmeri and Sierran C. integerrimus? At any rate I now see C. integerrimus as so variable that I shall keep the name for the Sierran plant as well as the original Santa Cruz form. As between C. andersonii (= orig. type C. integerrimus) and C. Palmeri, of course the fruits of the latter are twice the size of the

fruits of the former. - But if a leaf of Parry's Santa Cruz spm. were exchanged with a selected leaf of my Palomar no. 1502 (C. Palmeri) could the exchange be detected? I think not. Certainly not if the exchange were between Palomar 1502 and Sweetwater Creek (K. Brandegee).

It is of course possible that C. Palmeri is genetically a form of C. integerrimus and not related to C. spinosus. This theory would be supported by the absence of thorns in C. Palmeri and its larger inflorescence. The theory would suppose C. Palmeri as an arid form which have developed in the south as an offshoot of C. integerrimus of the Sierras, just as the El Dorado Co. foothill form (Sweetwater Creek) is an arid variant.

- Calif. Bot. Collectors. Some photographs contained in Houseworth's Photographs of Cal. Celebrities donated U.C. Library by Termes.

– Dr. C. F. Millspaugh, head of the Dept of Botany, Field Columbian Museum, is here for a short visit. He has had an operation, was told he could not live 16 hours, but fooled the surgeons and went to San Diego to recuperate, thence to Santa Catalina to botanize. He is preparing a list of Catalina plants. He says:

"At Chicago we have our entire herbarium cataloged. If any one wants to study the plants of Venezuela we can at once take those plants from their places in the general herbarium and place them at his disposal. If any one wants to see the plants of Oaxaca we can similarly extract all of Oaxaca plants at once. That is, the herbarium is cataloged by species, by country, by collector. Each state of the U.S. represents a unit.

We poison all specs. with corrosive sublimate solution. It is the only way. I know then that the specs. are safe. Then are no bugs in my collection! Carbon-bisulfide does not kill the herbarium beetle and certainly not the eggs of depredating larvae. I have experimented with the beetle, under the gas, for 16 days – and he survived. Our only exception to poisoning is in case of specs. 30 years old or over. Beetles as the minute insects do not attack specs. after 20 years. They depend in foraging upon the remaining moisture in the spec. and this disappears after about 18 or 20 years.

We have the herbarium of H.H. Patterson. He is still living. He was a printer interested in botany. He secured for his herbarium many valuable sets by printing labels for Pringle, Austin and many others and for his pay taking a set of the plants of the

distribution. We have Schott's Yucatan set. Once when I was in Washington I asked Coville permission to see them. Then they are, he said, pointing to the National Herbarium. But said I have you not a list? No; no list. Well that does me no good; it would be like hunting a needle in a haystack! Well, he said, go see Mrs. Schott. She has the original set. She wanted to sell it to us but we do not need it. In five minutes I was on a street-car on my way to her residence. I soon struck a bargain; told her I would report the next day. I went to the telegraph office, reported my find to the Director and he authorized me to close the bargain, saying a check would follow by next mail. I went back to Mrs. S's place, settled the matter, and was so elated that I took two bundles to my hotel to look them over. I found

among them not only the Yucatan plants which I was after but also a full set of the Schott plants of the Mexican Boundary Survey! I told Coville of enclosing my deal and also of the Mexican Boundary Survey plants. Why is that so? said Coville. Here, you do not want those Mex. Boundary plants. We need them. You give them to us and will get your plants in return. Why, I replied, I do not see how I can do that. The plants have been purchased by the Field Museum. I told them these plants were wanted. What would they say of me if I turned around and said they were not wanted? Coville was, however, deeply offended and would not speak to me for ten years! We also have the Hall & Harbour set. We had it from Hall's estate and it came to us on account of our system. Hall lived at in Illinois. His son thought of giving the herbarium to the

University of Illinois and had practically so decided, when he chanced to be in Chicago and visited the Field Museum. When he saw the manner in which the plants were made available by our system he at once decided to give it to the Field Museum.

I am getting out a flora of the Bahamas in conjunction with Britton. I have always been interested in insular floras surrounded by salt water because such floras always show species differences from the mainland – species are never quite the same. That is why I tackled Catalina. The Nicotiana grows you find on the highest ridges now as well as lower down. It could not well have been taken up there by the goats or sheep. The seed came in I believe by wind at the time of a fire. Such currents of air would easily carry seed from the mainland at the time a fire is causing a

rush of bodies of air upward. In the Bahamas, on one of the islands, we were collecting a Collinsia in a field. An intelligent negro stopped and said: "What you allus goin do with dat ere Hurricane weed?" It developed that the plant had not been known on the island until after a big hurricane. Its seed was brought from Hayti where that particular species of Collinsia is abundant. That is a distance of 500 miles."

Dr. M. could not walk when he reached San Diego. Now he is walking 15 to 20 miles a day on Catalina. His parents lived in Ithaca; the entire senior class (8 men) of the class of 1868 boarded at the Millspaugh house; among them were Faraker and Burchhalter who indulged in hot political disputes at table. The elder Millspaughs once said to Faraker: You must conduct your politics so the rest of us can eat our dinner in peace. If not, you must leave. Those

two, Foraker and Burckhalter were later to be rivals for the governorship of Ohio.

When I was a student at Cornell I lived in the Millspaugh house. It was conducted as a student boarding house by some lady whose name I have forgotten.

Millspaugh went on to say: "Schott's plants were not quoted in the Mexican Boundary Survey because Thurber became angry with Schott and refused to have Schott's specimens included for study." [Carex Schottii was named by Dewey (Bot. Mex. Bound. 231) in honor of Schott.] "Thurber was in charge of the botany of the survey, or at least part of it and he saw to it that Schott's plants did not reach Torrey.

A.A. Heller is a believer in collecting large suites of a single number. I was in Porto Rico at the

same time as Heller. My press full of plants [from a certain district] represented 123 species. Heller's press was four times as thick and contained 5 or 6 species. As soon as Britton found out what Heller was doing he let him go. Britton wanted to find out what was in Porto Rico; thus Heller lost his job with the New York Bot. Garden.

Pringle's sets were not exact duplicates. If he was short on a certain species he would collect the same species again, maybe in another state, and give it the old number."

"Edw. Palmer sorted his plants after he got home and gave numbers to the plants of a pile that he thought alike. His numbers are very unreliable for quoting.

Patterson and Hall both use "distribution numbers." That is their

sets were not all of the same number, some specimen sets being short, each set was numbered separately. If the subscriber bought a set of 90, he knew that he got 90 for no numbers were missing! Pringle behaved somewhat similarly."

"We have a great many of E. Greene's early types [I suppose he meant paratypes.] We have more than Greene has in his own herb. Greene was fond of bragging about his herbarium and it is beautifully labeled; it is in beautiful order. He offered it to us for a salary and a room to work and I recommended to our trustees that the offer be accepted. Being hard-headed business men they decided not to accept, since they did not

know how long he would live. Well, I saw the end. Greene lived 18 mos. after that."

"We have Hall's correspondence. It tells all about his quarrels with C.C. Parry on the Rocky Mt. survey. Hall wanted to go into the area of some fine mts. peak he saw; but Parry being lazy would not send the expedition that way or would not delay it for Hall."

"Heller had the temerity to tell Britton that his [Heller's] manner of collecting was much superior to that Britton desired to impose upon him" [I laughed and said: Oh, yes; Heller is a free lance!].

— James, J.H. A botanist in S. Cal. (Am. Nat. 14:492,—1880); notes on S. Cal. plants (Bot. Gaz. 5:126,—1880).

— Common names of Montana Plants. (Montana agr. College Sci. Studies, Bot. vol. 1, no. 3).

– Iris longipetala Dougl. Brought in from S.F. by Miss A. H. McGowan, Bot. 104. Petals violet–purple, 2½ inches long, veined. Sepals obovate, obtuse, dull white, purple-veined, as long as the petals but recurving. Sepals with a thick ridge running from claw into middle of blade, becoming thinner and disappearing. The terminal portion of this ridge is crest-like and undulate and lies in a small field of yellow. Petals notched at summit, oblanceolate.

– 2 Mar. 1920.

– Orthocarpus, review of.

O. pachystachyus Gray, type from Yreka, Greene, is spoken of by Piper as not collected since (seemingly). There is a reason. The collections from that region have been named O. cuspidatus Greene and O. copelandii Eastw.! I feel quite sure that Butler 1584 is

O. pachystachys, and if so it is not specifically different from Hall 8950. The dif. in length of corolla is not specific for we allow as much range in length in O. erianthus. The rel. length lips and galea is more important but this varies with age of flower, and also varies otherwise sufficiently to prove my point. Cf. Alexander + Kellogg 286 (S. Fork Salmon), (Shackelford Creek). 2 † Butler 1680) Feel that the robustness of Butler 1584 is sufficient to account for difference in size of flowers. The flowers on Butler 1584, in shape, pubescence of and shape of galea and in sacs are quite like those of Butler 1680 + 583 (Shackelford Creek). The fact that O. pachystachys "has never been found again in a region well-botanized is a suggestion at least that the type is not nowadays being interpreted

correctly.

O. densiflorus:- the most marked form has deep red-purple (long) teeth. This is a common form. A whitish form with pale teeth could probably be differentiated

Orthocarpus erianthus Benth. This is the most common species in the genus, by far the most numerous in individuals! On the margins of its range it gives rise to variants which have been in some cases described as species: Orthocarpus Bidwellii Gray; Orthocarpus micranthus Heller; Orthocarpus flabellifer Eastw. Orthocarpus versicolor Greene; in other cases as varieties; var. roseus Gray; var. gratiosus Jepson. Tracy. — 6 Mar. 1920.

- Dr. H. J. Webber. Had a long talk with him last night at his room at the Faculty Club. He has great store of botanical experience. Started out by buying all the sets of dried plants currently on the market. Got so big a collection he had to part with it, since he moved about so much. Has been in the breeding game since he was quite young. Accumulated 5 or 6 feet shelving of separates relating to breeding. Spoke of the decline of the printing arts in this country as related to color work, woodcuts and steel engraving. I remarked that there would never be anything again like the "Cactaceae of the Mexican Boundary". Webber says Griffiths has a good illustrated monograph of the Opuntiaceae ready and that he means to interest Huntington of Los Angeles in publishing it for Griffiths. Webber

is going to a big nursery and seed firm in South Carolina at the end of this college year; he will get $25,000 a year and moreover have a chance to give his time to plant breeding instead of being swamped by administrative duties as at present. Webber thoroughly believes in plant-breeding. He would have a great botanic garden in California (as would the rest of us this long time), the fundamental basis being systematic botany. Systematic botany would then be applied to determine the plants best for breeding. The plants we now have are not in all probability the best we have. They were "picked up in the backyard" by our remote ancestors and gradually selected until the result is now what we have. They were mostly accidents, our cultivated plants, and we should now systematically secure

the best. There is no reason why we should depend upon Solanum tuberosum for a tuber. There are probably better tubers. Spiraea tuberosa is probably better initial material. We would have further the advantage that a crop would enrich the soil, instead of exhausting it. We have in Cal. leguminous plants that are nearly as good forage plants (Nature) as Alfalfa, and we should be starting with them while Alfalfa has been selected for untold centuries. Muir speaks of an Elymus down towards Mono Lake that the Indian women use threshing into their winnowing baskets for the seed! Webber would have a botanic garden whose end would be the production of new and better plants for humanity — it would be in the service of humanity.

Dr. Webber has been rather swamped here with work not-

of his liking and he said one day in a burst of enthusiastic eminent upon my botanizing plans: "I'd rather go out in the Sierras and botanize for the whole summer than anything I know — study plants in the field, see them in their native habitat, work out their life history and observe their associates. He believes in popularizing botany and in the use of common names.

— John Burroughs is visiting in Berkeley at Mr & Mrs. Geo. Stone's place (Mrs. V. Moody place). He recalled me when I asked him to remember the botany party on Unalaska when he came into port on the Harriman Expedition. At that port I found him and Muir seated side by side in the cabin disputating. "Yes", said Burroughs, "Muir was always disputating. I wanted to go ashore

at Unalaska, — there were flowers and birds and snowy mountains — and so I put on my coat, but — Muir went and put it away — saying it was not worth while." Burroughs looks well and reasonably hearty considering his age. — Sunday, 8 Mar. — Drove to Stanford Mar. 10 with Mr. Abrams (took Smiley) gave us a luncheon to which he invited Campbell, Peirce, Burlingame & MacMurphy. We had a very enjoyable time.

— Drove to Hillsboro, Saturday afternoon, to see the J. B. Smiths. As I did not find them in, went on down to Stanford, spent the night with the ever-delightful Peirce family, came back to Hillsboro on Sunday and had a most pleasant day with the J. B. Smiths — a red-letter day —

13 Mar. 1920.

No. 8427. Stellaria media

Burlingame. 14 Mar.

No. 8428. Capsella bursa-pastoris. Fine pure stands of it — seems to occur in greater abundance than usual — Lepidium nitidum occurs in small colonies which may be picked out in a grassy field as colored spots due to the reddish-brown pods.

— Lactuca scariola — in grain fields the tough fibers of its stems choke the combined harvesters and soon break teeth off the cylinders says Judge Platt.

— Bolander, H.N. Some notes concerning him are contained in a letter of Chas. W. Wendle, 6 Apr. 1920.

— Brandegee, Mrs. K., died on Sat. Apr. 3, 1920. Cf. Hall in litt. apr. 4, 1920.

— Allium. A. brewri is entirely distinct from the San Gabriel Mts. plants of Peirson which I now call A. fimbriatum var. peirsonii Jepson. Var. peirsonii is constant in its character

of large flowers (6 to 7 lines long) with straight perianth segments, not curved at tip as in the usual A. fimbriatum Watk., the type of which Palmer got on the desert (Mohave) at base of the San Bernardino Mts. and not "headwaters of the Mohave River" which would mean high in the San Bernardino Mts. So I am referring nearly all desert spms. to A. fimbriatum straight, that is from the ranges bordering the Colorado and Mohave deserts on the west. Ord Mt., 5879 = A. fimbriatum.

A. brewri is entirely distinct from A. fimbriatum because it has a curved crest, one crest really; while A. fimbriatum has 2 (to each lobe) long distinct crests to each lobe. All this is in correction of statements on p. 83, + 89.

— Cont. from p. 34. No. 7997 a. Polygonum coccineum Muhl.

This was not numbered in the field but was in same folder as one spm. of 7997. Collected in Grasshopper Valley. Aug. 15, 1918.

– Cont. from p. 173. B. californicum is the name I am now using in print instead of B. armatum.

– Cupressus pygmaea Sarg. Several fine specimens near the Fort Bragg to Willits auto road about 3-6 mi. back of Noyo. Mostly 60 ft found among other trees a little off the road and on an old abandoned road. – R. P. Brandt, Oct. 1, 1918.

– Greene, E. L.. His chief work at Berkely was stimulation, stimulation of work in botany, inspiration which never left or never wholly left those to whom he passed it on. With this he was a questioner or challenger of authority, a stirrer up of things, no respecter of the established order. All this was mightily needed. That he did this out of colossal egotism is of no especial importance. Any man can be loaded with faults or foibles.

Addresses – Modoc Co.

– M. Vernon, vegetable farmer, Lake City.
– Mrs. Largent, Lake City, helper of Mrs. R. M. Austin, in collecting plants
– Briles, Hort. Com. Modoc Co., Davis Creek.
– Beatty, farmer. Ft. Bidwell
– Geo. D. Campbell, Jess Valley (Ivy P.O.).
– C. F. Spargur*, Jess Valley (Likely P.O.)
– Bob Sehlers, Assessor, Modoc Co.

Lake Tahoe.

– "Bobbie" Marx
– Professor Marx

– Cont. from p. 133. Priest Hill: Adenostoma fasciculatum with admixture of Photinia arbutifolia, a little Philadelphus 6 ft 6 in.; C. americus chrysolepis in cañons, Calycanthus occidentalis on flats.

* = "Jake" Sparger acc. Dutton, postcard

See letter of Horne - Apr. 15, 1919

Apr. 5, 1919.

CALIFORNIA

Torula glutinosa Cke & Hark.
on
Eriodictyon californicum Greene.

Mt. Tamalpais -

W. L. JEPSON, No. 8228 Alt.

San Felipe trip Irem.

- A. C. Goodchild, 1320 Nipomo st., San Luis Obispo. Tabardillo, Hazkelia ? puberula.

Memoranda.

David Douglas, Botanist at Hawaii, by W. F. Wilson. c. 1918. Thrum's, Ltd., Honolulu. 81 pp

— Lake Leonard.

Mrs. Henry Boyle
Miss Una Boyle
A. N. Poe.
Geo - Moore.

Not indexed, p. 171